RESTART | RETREAT

MINNESOTA CENTER FOR THE RESPONSIBLE USE OF TECHNOLOGY

Figure 1.a design thesis by

JOSEPH SCALLON

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MINNESOTA CENTER FOR THE RESPONSIBLE USE OF TECHNOLOGY

A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

by
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In Partial Fulfillment of the Requirements
for the Degree of
Master of Architecture

Primary Thesis Advisor

Thesis Committee Chair 5/5/12

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ABSTRACT The Minnesota Center for the Responsible Use of Technology is an architectural design for a 20,000 sq ft computer education center in Minneapolis that promotes the responsible use of technology. The design provides for education and research related to the responsible use of computer technology as well as promoting a tangible connection between humans, technology, and the built world rather than a technologically mediated virtual environment.

keywords: responsibility, technology, education.

THE PROBLEM:

How can a built environment promote the responsible use of technology?

STATEMENT OF INTENT.

TYPOLOGY:

Computer Education Center

CLAIM:

The built environment can promote the responsible use of technology.

PREMISE 1:

The virtual environment provides the groundwork for irresponsible use of technology.

PREMISE 2:

The built environment can be experienced firsthand, while the virtual environment is mediated by technology (Taylor).

PREMISE 3:

The built environment offers tangible experiences that the virtual environment cannot.

THEORETICAL PREMISE/UNIFYING IDEA:

A design that promotes direct connections between technology and the built environment rather than the virtual environment can promote responsible use.

PROJECT JUSTIFICATION:

As technology mediates our lives on a daily basis, it is important to educate ourselves to responsibly use these tools in order to avoid future societal concerns.

THE PROPOSAL.

NARRATIVE

The Internet may be the greatest technological advancement of our generation. It has opened up a vast web of social and economic interaction that spans the globe. However, the internet is not immune to the negative effects of progress.

As more of our daily activities are mediated by the Internet, we find ourselves wrapped up in a virtual world endlessly filled with entertainment. We can explore the world while sitting at home. We shop online, socialize online, and entertain ourselves online. We have less need to interact with the world we live in; we escape to our virtual life; the place where we can anonymously consume to our heart's content.

What has happened to our real lives since we escaped? Our friends may only stay close if they keep up their online presence, our relationships with those we love may crumble due to competition with anonymous online encounters, and we may have yet to meet our neighbors because of the awkwardness that arises from having a real interaction. Our social interactions, the very basis of our society, are in danger of being entirely mediated by the internet.

In 1995, the concept of Internet addiction was suggested satirically for the first time. No longer just a joke, the concept is all but obvious now; most of us would be lost without our virtual world. But after we admit our addiction to the Internet, where do we go?

There is a strong relationship to our physical existence that is lost in our virtual endeavors. This relationship is the key to bringing us back to the full and rich realm of tangible interactions, physically and socially, that delight our senses and make up our world. A life free of the web of technological mediation that is the Internet is at our fingertips, and we must never forget it.

USER/CLIENT

The users of this Center for the are students and professionals who would like to fight cyberslacking and problematic internet use at the workplace, as well as members of the public who need access to high-technology, such as freelance professionals.

The client for the facility is the University of Minnesota; the University will benefit from the teaching opportunities provided, and the building offers opportunities to graduate students beginning careers. The building will also serve as an icon of the University's commitment to the future.

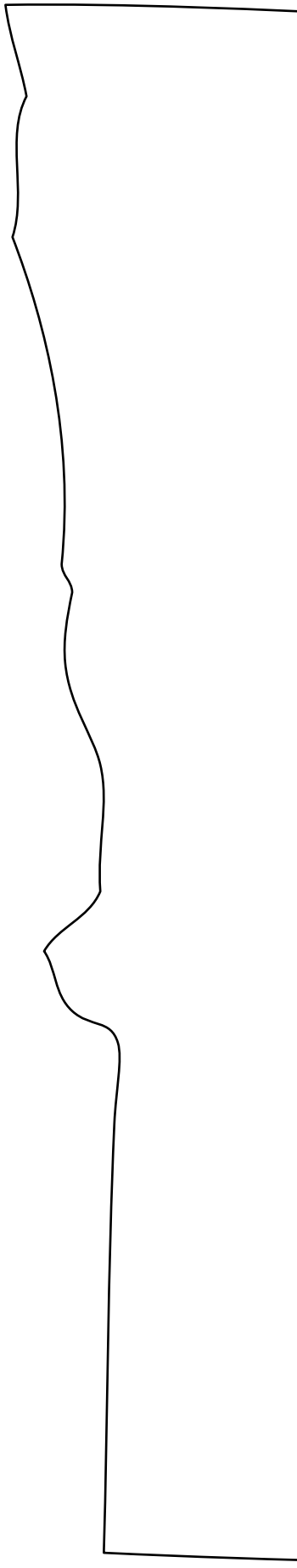
PROJECT ELEMENTS

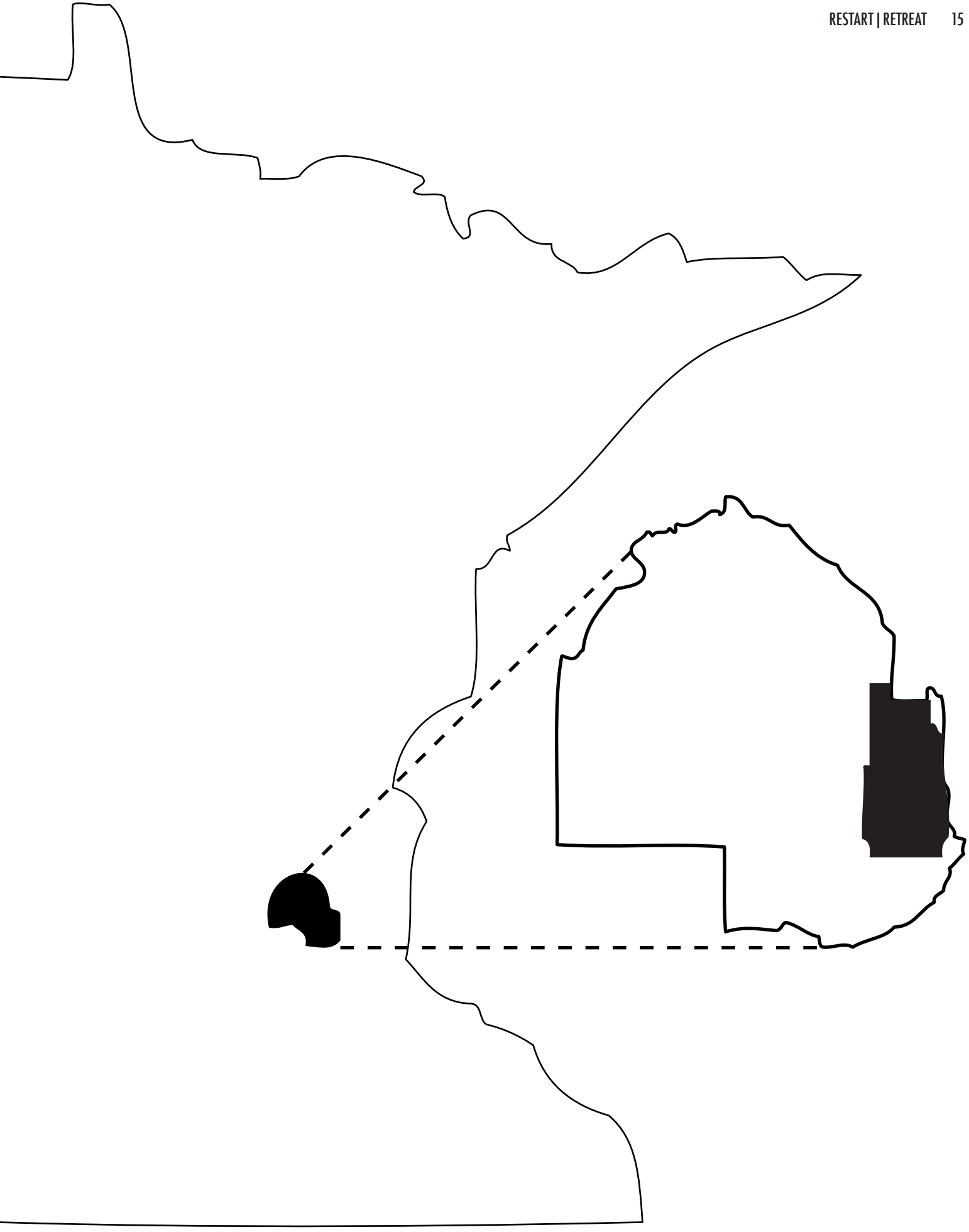
On top of providing seminar and classroom spaces, the building is designed to house a digital workshop. The digital workshop will consist of teaching and working laboratories and breakout workspaces. Outdoor garden spaces are also required.

-Reception Lobby
-Large seminar room
-Classrooms
-Outdoor patio/yard
-Large study room
-Computer Labs
-Offices

SITE INFORMATION

The site, a roughly 20,000 sqft corner lot in the Dinkytown district of Minneapolis, was chosen for several reasons. First, it is close to the University of Minnesota Minneapolis campus, providing a perfect opportunity for university-related research. Second, there is a very large population of young people in the area; Dinkytown is known for its young residents, and the site is adjacent to the University Technology Center. Also, the site is in a pedestrian-friendly neighborhood with plentiful nearby parking and slow traffic.





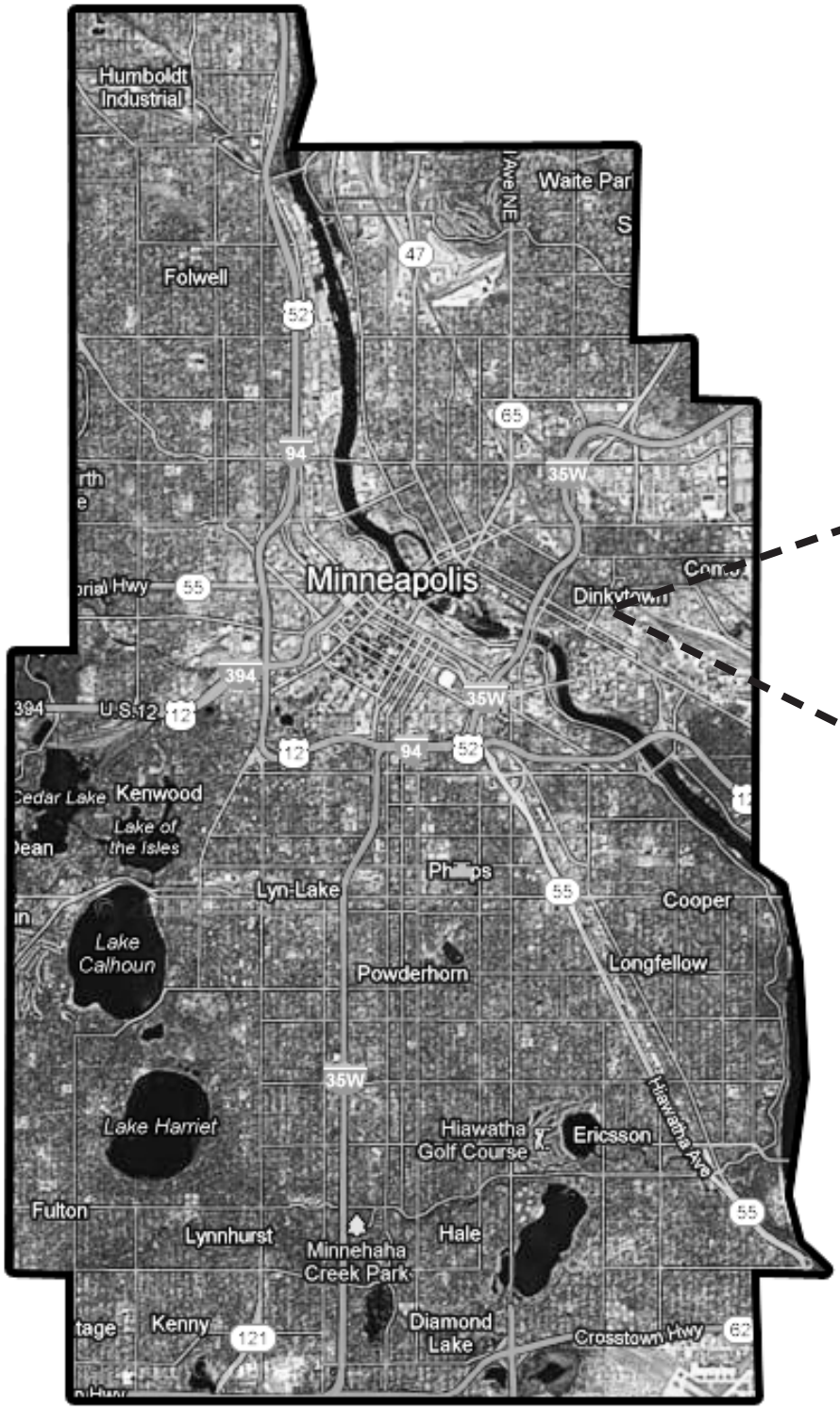


Figure 2. © Google Maps 2011.

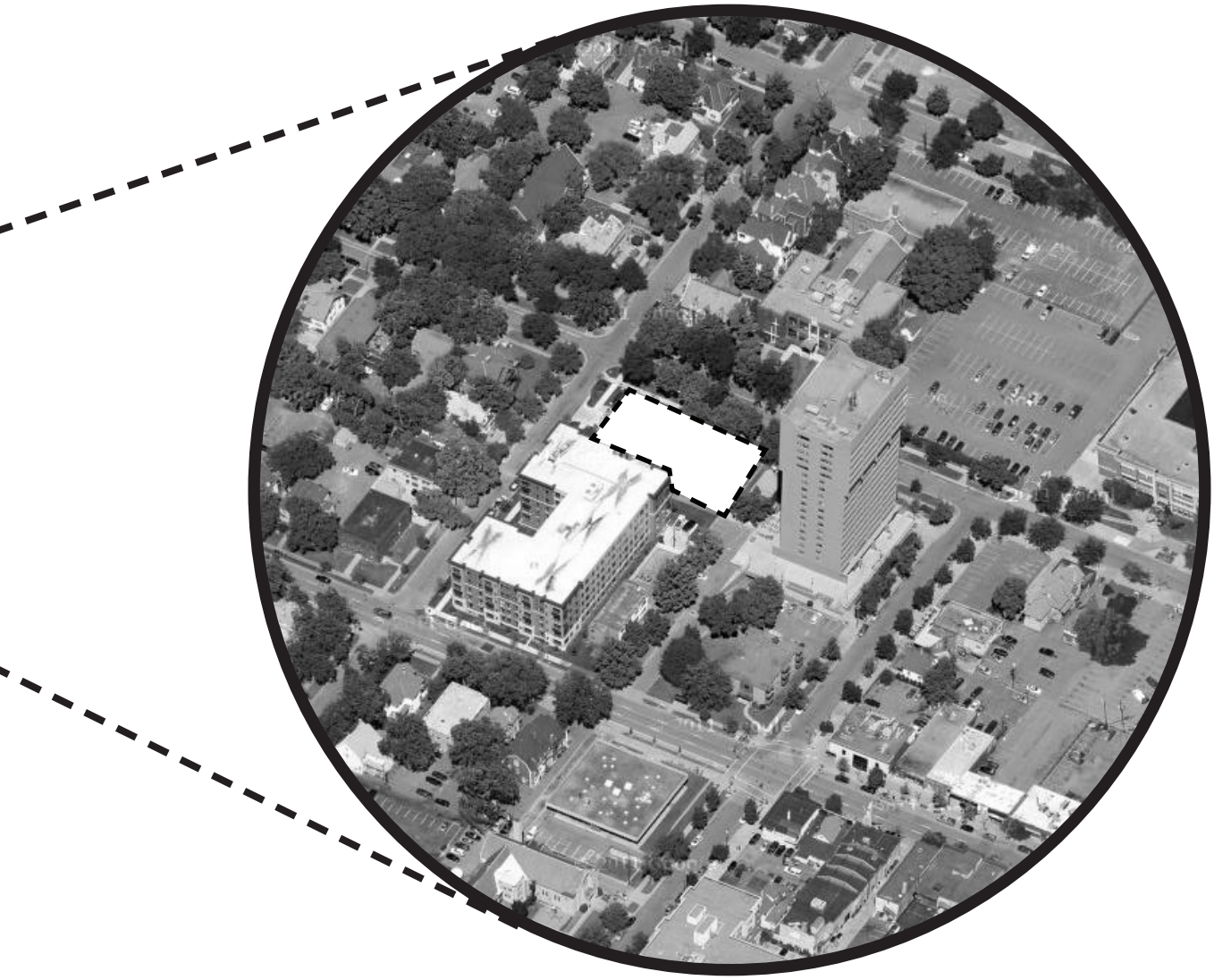


Figure 3. © Google Maps 2011.

PROJECT EMPHASIS

The primary emphasis of of the design is to show the responsible use of technology in action. Secondary emphasis is placed on education related to problematic internet use.

PLAN FOR PROCEEDING.

RESEARCH DIRECTION

Science
-What is the psychology of a problematic internet user?
-How does problematic internet use arise?
-How do we treat Internet addiction?
-How does the virtual world compare to the physical?

Philosophy
-What is the nature of our relationship with technology?
-How can a built environment affect social behavior?
-How has our idea of progress affected our values?

Historical Precedents
-How have other addicts been rehabilitated?
-What other technologies have had similar issues?

Site Analysis
-How can the site promote rehabilitation?
-What can the site offer researchers?

Programming
-What spaces will the design need to house users?
-What spaces are necessary to promote rehabilitation?
-What spaces are needed to promote research?

DESIGN METHODOLOGY

The quantitative/qualitative method will be employed to conduct research. This strategy will place emphasis on simultaneously gathering quantitative and qualitative data about Internet and computer addiction and treatment. Analysis, interpretation, and integration of data will be done in several stages during research to guide the project to a cohesive design based on the theoretical premise. Data will be gathered through case studies, interviews, site observation and archival research and will be presented both graphically and textually.

DOCUMENTATION

Documentation will be done through photos, observational notes, drawings, and notation of archival sources. Data will be compiled digitally weekly, or as research directions change, and will be saved for presentation with the final design.

STUDIO EXPERIENCE

SECOND YEAR

Fall 2008: Darryl Booker

Tea House
Boathouse

Spring 2009: Joan Vorderbruggen

Dance Studio
Cripple Creek Dwelling

THIRD YEAR

Fall 2009: Steven Martens

Athabascan School
Fire House

Spring 2010: David Crutchfield/ Mike Christensen

Performing Arts Center
Iteration studies

FOURTH YEAR

Fall 2010: Don Faulkner

Sustainable High Rise
KKE Design Competition

Spring 2011: Don Faulkner/ Frank Kratky

Marvin Windows Competition
North Dakota City Masterplan

FIFTH YEAR

Fall 2011: Stephen Wischer

Artefact: Design through Metaphor

THE PROGRAM.

RESEARCH RESULTS

The anxiety surrounding what the Internet provides our culture is pervasive. One thing is certain, however; the Internet has changed the way we live and interact on a daily basis, for good or bad. "The Internet is unlike anything we've seen before," says David Greenfield, PhD, founder of the Center for Internet Studies. "It's a socially connecting device that's socially isolating at the same time." (DeAngelis, 2000). The Internet has provided a network of social interaction and dilemma that has not been observed since the Industrial Revolution.

INTERNET ADDICTION

It is difficult to estimate how widespread this problem is. A national study conducted by a team from Stanford University's School of Medicine estimates that nearly one in eight Americans suffer from at least one sign of problematic Internet use (Center for Internet Addiction Recovery). According to Maressa Orzack, director of the Computer Addiction Study Center at Harvard University's McLean Hospital, between five and ten percent of Web surfers suffer some form of Web dependency (Goldman).

Research on Internet addiction has only been conducted since 1996, when Dr. Kimberly Young presented the first paper on the topic at the American Psychological Association's annual conference held in Toronto entitled, "Internet Addiction: The Emergence of a New Disorder" (Center for Internet Addiction Recovery). Since then, studies have been conducted in other countries with pervasive Internet use; Internet abuse is even considered a public health concern in China, Korea, and Taiwan. Research and treatment centers have only begun to emerge, however, and the need is only growing. Experts are split on whether or not to classify Internet addiction as a disorder or compulsion. More broadly, Internet addiction is referred to as Internet overuse, problematic computer use or pathological computer use that interferes with daily life. Online activities which, if done in person, would normally be considered troublesome, such as com-

pulsive gambling or shopping, are sometimes called net compulsions (Goldman). Others, such as reading or playing computer games, are troubling only to the extent that these activities interfere with normal life. Supporters of disorder classification often divide Internet addiction into categories by activity, such as inappropriate pornography use, gaming, online social networking, blogging, email, or Internet shopping.

THE ADDICT

Researchers are finding that Internet addiction is a multifaceted problem that may require its own field of study. Experts are fascinated by Internet addiction's emotional, psychological and social implications. In their work, they are finding a subset of people who spend so much time online, especially in romantic encounters, that they report problems in their marriages, families, and work. Impairments of real-life relationships are disrupted as a result of excessive use of the Internet. Individuals suffering from Internet addiction spend more time in solitary seclusion, spend less time with real people in their lives, and are often viewed as socially awkward. Arguments may result due to the volume of time spent on-line. Those suffering from Internet addiction may attempt to conceal the amount of time spent on-line, which results in distrust and the disturbance of quality in once -stable relationships (Illinois Institute for Addiction Recovery). This may be especially true for youths addicted to online gaming, since significant social learning opportunities are replaced by time spent online.

"Internet addicts suffer from emotional problems such as depression and anxiety-related disorders and often use the fantasy world of the Internet to psychologically escape unpleasant feelings or stressful situations," says Dr. Kimberly Young. "Over 60% of people seeking treatment for IAD claim involvement with sexual activities online which they consider inappropriate, such as excessive attention to pornography or involvement in explicit sexual conversations online. More than half are also addicted to

alcohol, drugs, tobacco, or sex (Center for Internet Addiction)." One of the major reasons that the Internet is so addicting is the lack of limits and the absence of accountability (Internet Addiction Guide).

A UNIQUE PROBLEM

In addition, researchers speculate that certain unique aspects of the Internet may lure people into trouble they might otherwise avoid. Internet overuse may be attributed to the fact that it has become increasingly difficult to distinguish between the online and offline worlds. The Internet has tremendous potential to affect the emotions of humans and in turn, alter our self-perception and anxiety levels (Horstman). The Internet provides a Pandora's box of virtual spaces, virtual friends, virtual games, virtual rewards, virtual conflict, and virtual encounters. These problems together offer a vast range of psychological issues to address. "I see two fundamental differences between connected life, that is, life through the lens of technology, and real life, the one in which we live," says Jim Taylor, PhD, in The Power of Prime. "First, wired life is not real, meaning experiences are created by technology with the aim of approximating and simulating actual experience. The problem with this "low-resolution" life is that, though it shares similarities to real life, it lacks the high resolution and the granularity of real life. For example, email can be a wonderful means of communication, but it lacks visual input (so important to effective communication), the nuance of facial expressions and body language, and clear emotional content."

Taylor goes on to point out that there are always mediators in the digital world; we will never experience firsthand the virtual environments offered by the computer. Susan Greenfield, a noted British neuroscientist, also has concerns over the mediated experiences provided by technology. She believes that, for all of its appearance of freedom, technology puts us in a box. "We may think we have options to think, act, and create, but we are limited to the choices the mediating technology provides us (Taylor)."

PROBLEMATIC INTERNET USE AND POPULAR CULTURE

Evidence of problematic Internet use might be best recognized through the lens of pop culture-- popular television shows like Step by Step, Law and Order, Boston Legal, and CSI Miami all depict victims suffering from video game addiction. Meanwhile, comedies such as South Park, King of the Hill and The Simpsons parody many aspects of Internet dependence.

More disturbing reports are delivered by the media--according to ABC News, this year, a 20 year old British man died after spending so much time sitting in front of his computer that he formed a pulmonary embolism in his leg that eventually stopped his heart (Carollo). In November 2010 in South Philadelphia, Kendall Anderson, 16, killed his mother for taking away his computer games by hitting her 20 times with a claw hammer while she slept (Sheridan).

Legal battles have also arisen over Internet addiction; in 2010, Wired Magazine reported that a man in Hawaii, Craig Smallwood, sued the gaming company NCsoft for negligence and for not specifying to him that their game, Lineage II, was so addicting. He alleged that he would not have begun playing if he was aware that he would become addicted. Smallwood claims to have played Lineage for 20,000 hours between 2004 and 2009 (Kravits).

Another alleged addict, an employee of IBM, is suing the company after being fired for using his work computer to visit an Internet-sex chat room (HRE). The man claims he is protected under the ADA because he suffers from an addiction to pornography that was triggered by post-traumatic stress disorder arising from his service in the Vietnam War. While his ADA challenge may not hold up in court, it provides a powerful argument for the mainstream acceptance of Internet addiction as a disorder.

TREATING PROBLEMATIC INTERNET USE

Because of the ambiguous classification of Internet addiction, treating the symptoms becomes

becomes difficult. “They experience the same cravings and withdrawal symptoms as, say, a compulsive gambler waylaid en route to Vegas.” Says Orzack. She refers most of her Net-addicted patients to psychiatrists for prescriptions for antidepressants and antianxiety medication. Dr. Eric Hollander of New York's Mount Sinai Medical Center is currently treating 22 supposed addicts with Lexapro as part of a clinical study sponsored by Forest Laboratories, which markets the antidepressant (Goldman). And worse, turning off computers does not solve the problem, say doctors like David Greenfield, assistant clinical professor of psychiatry at the University of Connecticut School of Medicine. Greenfield worries that addicts are finding new ways to score a fix from their smartphones. "All these devices do the same thing--they numb people from their pain," he says (Goldman).

Treating problematic Internet use can be equally difficult. If it is not an addiction disorder, can it be treated the same way as other addictions are? Should Internet compulsions be treated the same as other compulsive tendencies? Corrective strategies for Internet addiction include content-control software, counseling, and behavioral therapy, but not all are successful.

Families in China have turned to unlicensed training camps that offer to "wean" their children from overuse of the Internet. (Center for Internet Addiction Recovery). The training camps have been associated with the death of at least one Chinese youth. Only one residential treatment center, in Seattle, currently rehabilitates Internet addicts in the United States. The center offers a 45-day program to wean residents from problematic computer use, but only has room to treat six patients at a time.

CONCLUSIONS

Problematic Internet use pervades American culture. Men are becoming obsessed with pornography, teenagers are killing to play games online, and children are missing fundamental social skills that have been replaced by virtual imitations—and there is little help in sight. Indeed, few psychologists have

done research to clarify what Internet ddiction really is, or if it can even be classified as addiction. Even less has been done to treat Internet compulsion related disorders; centers for treatment are scarce, and can usually only be found online, ironically. Measures must be taken to research problematic Internet use, rehabilitate Internet addicts, and educate society about compulsive behavior online. »

SUMMARY

Problematic Internet use is an emerging problem facing 21st century societies. Internet abuse is a multi-faceted social issue that is largely misunderstood. As a potential lasting side-effect of the most powerful invention of the late 20th century, problematic Internet use should be treated as a serious threat to the health and well-being of society. Research, rehabilitation, and education are all key in promoting the responsible use of technology.

Problems with treatment of problematic Internet use include the lack of agreement on the classification of Internet abuse as an addiction, the scope of the problem of internet abuse, and the lack of research compiled about the problematic Internet use because of its contemporary nature.

These problems, when paired with the symptoms related to Internet addiction, pose an interesting problem for the designer. In order to design for the responsible use of technology, the designer must understand the basic principles of the problem as well as the difference between problematic Internet use and other disorders and compulsions.

The virtual and mediated nature of the Internet seems to be the strongest difference between this problem and others; therefore, the relationship between the actual and the virtual then becomes important for the designer. How will a user relate to a built environment when they are infatuated with a virtual one? How can the built environment compete with the virtual? What is the difference between the real and the virtual world? These are questions that need to be addressed. Perhaps the easiest way to address these questions is to compare the activities that the Internet offers to the mind with the tactile world the built environment offers the body.

A design solution should aim to provide spaces to promote the responsible use of computers and the Internet. The design should replace the mediated experiences offered by the Internet with the direct,

tactile, and meaningful experiences of a built environment while providing space for users to become reacquainted with the physical and social norms of a high-tech society. An ideal solution would provide the user with a more meaningful replacement for detrimental online activities in a manner that is free of the clutter of technological mediation.

Jane Fide, Head of Maggie's Cancer Caring Center in Cheltenham, describes the benefits that the design of the building brings to her staff and the users: "Centre users comment on the contrast between being in the oncology waiting-room and being inside our centre. The wide spaces, views outside to gardens, comfortable surroundings, even the smell of the wood furnishings, all add to the general feeling of tranquillity within the centre (Griffiths)." She goes on: "By being interesting yet calm, our building allows visitors to feel less anxious and shocked, more open and able to take in new information and make good contact with others. Furthermore, our staff of health professionals find the building and environment most beneficial in facilitating the work we do, as the buildings are positive environments within which to welcome and console, inform, listen and be alongside those living with cancer." Good design can create environments that are, among other things, enjoyable to spend time in and practical to use, and in no scenario is this more important than when promoting the responsible use of technology.

In order for society to address the issues related to problematic Internet use, we must educate ourselves on the negative impacts of modern technology. There is an immediate need for quality places to educate and lead by example by promoting a more meaningful connection to technology. These places will need to address this need holistically; this special affliction needs influence from the built world that can compete with the virtual one. Design may provide tactile sensations only the real world can offer, but education will be the key to successful rehabilitation of our technologically fixated society.»

TYPOLOGICAL RESEARCH.

CASE 1

Figure 4.

REHABILITATION CENTRE, NETHERLANDS BY ARCHITECTENBUREAU KOEN VAN VELSEN

Rehabilitation Centre 'Groot Klimmendaal' stands quietly in the woods, cantilevering out over the landscape toward the trees to preserve a small footprint. Despite its size, the brown-golden anodized aluminum facade allows the nearly 14,000 sq m building to blend in with its natural surroundings. Bands of glass break up the facade and allow users an uninterrupted view across the natural landscape in all directions. Although it is a large rectangular mass, the architect's attention to tectonics and hierarchy allow the building to gracefully nest within its forest

Figure 5.

environment. The subtle cantilivers of the upper floors and the vertical rise of the building allow it to be larger than its footprint would suggest. The architect opted to stack building elements rather than allow the building to sprawl across the landscape, allowing for a larger percentage of the site to remain naturally landscaped. This vertical approach also has the added benefit of providing views and daylighting to users throughout the building.

Circulation is placed around the interior spaces, allowing spaces of activity to be centrally located. Vertical circulation is

provided by a shallow wooden staircase that gently guides users through the building, mimicking the subtle hill on which the structure is placed.

The open floorplan and abundance of natural daylighting from both exterior openings and light wells on the interior further connect the building to the site by offering light and views to nearly all of the interior spaces. These elements provide visual cues into the nature of the placement of the user within the site as well as hierachy of building elements.

Energy efficiency and sustainability are achieved through the use of efficient mechanical and electrical installations as well as the utilization of thermal mass, which reduces the need for heating and cooling. Sustainable and low maintenance building materials were also chosen. Koen van Velsen worked extensively with the users of the building to design it to be a welcoming environment that offers a natural habitat for care.

The large program rehabilitation center provides both the community and patients use of its facilities, which include offices, a clinic, sports facilities, a swimming pool, a restaurant and theatre.

This case provides insight into the design of a complex program within a small site as well as insight into the relationship daylighting and circulation have on program. The building also illustrates the importance of sustainability and natural environments within a rehabilitative setting.

By placing similar "activity spaces" on the interior of the building and circulation on the outside, a complex program can be formally simplified. This method also allows a visual connection not only to other parts of the building, but to exterior spaces as well. Instead of the confusing knot of interior rooms connected by florescent tunnels that are currently provided by contemporary medical facilities, the building provides an elegantly clad stack of utilitarian rehabilitation spaces flooded with natural daylight and views.

The overall feeling provided by the building is one of unity; users sense their place within the

building and the landscape at once, and they can easily find their way from one area of the building to the next. The arrangement of the program is clear. Below are offices, above are the clinical areas, and on the roof a Ronald McDonald House with its own identity. The double-height ground floor at entrance level facilitates the special elements of the program that are larger, such as the sports facility and theater.

The building takes advantage of its beautiful surroundings unlike any other by providing constant access both visually and physically. Circulation effortlessly moves users from entrance to activity spaces and across the site. The effort put forth by the architect to provide a welcoming and inviting environment for the users of the building is evident in its design.

For its ability to provide a large-scale, sustainable, and inviting environment for rehabilitation, the Rehabilitation Centre Groot Klimmendaal is unique. Through use of building elements including circulation and hierarchy, this case illustrates the possibility for large-scale programs to intimately engage their surroundings without sprawl or complexity, while at the same time utilizing sustainable strategies and providing a welcoming atmosphere.

Rehabilitation Centre Groot Klimmendaal was awarded Building of the Year 2010 by the Dutch Association of Architects, winner of the first Hedy d'Ancona Award 2010 for excellent healthcare architecture, winner of the Arnhem Heuvelink Award 2010 and winner of the Dutch Design Award 2010 public award and category commercial interior, and was chosen as a finalist for the 2011 Mies Van Der Rohe Award.

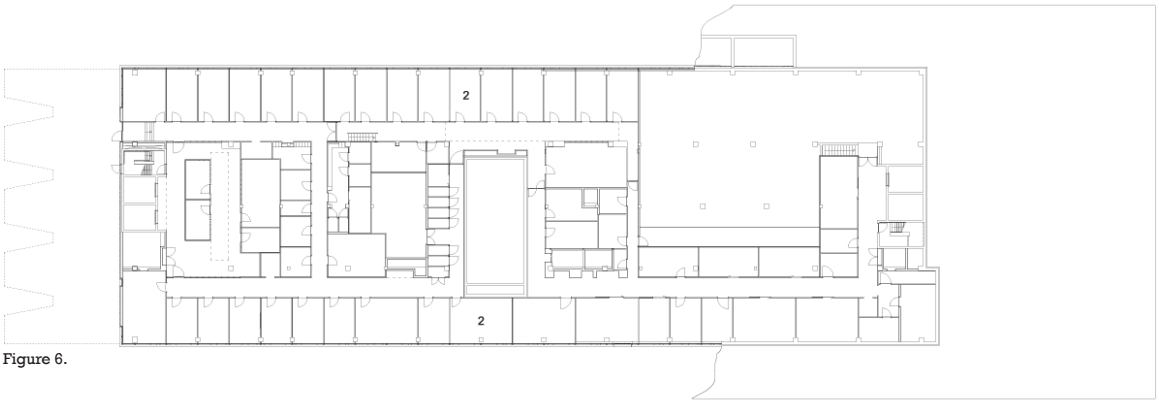


Figure 6.

0 20 m

level -1

1 entrance
2 office
3 gymnasium
4 swimming pool
5 theatre
6 restaurant
7 fitness centre
8 room for patient
9 living room
10 ronald mcdonald house
11 void
12 patio

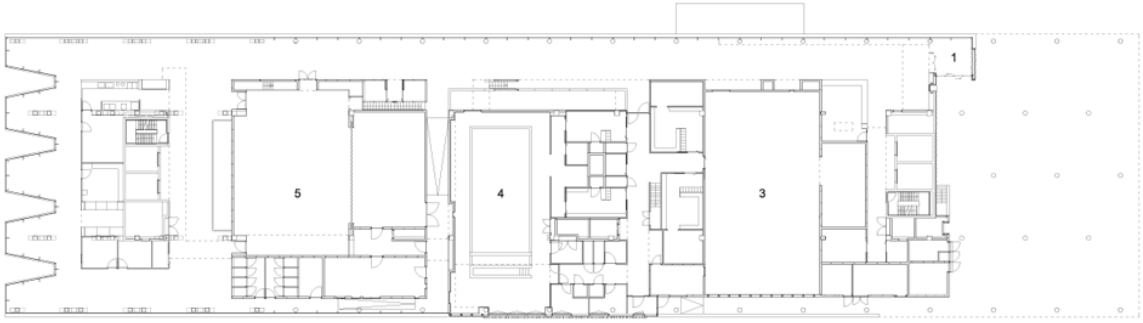


Figure 7.

0 20 m

level 0

1 entrance
2 office
3 gymnasium
4 swimming pool
5 theatre
6 restaurant
7 fitness centre
8 room for patient
9 living room
10 ronald mcdonald house
11 void
12 patio

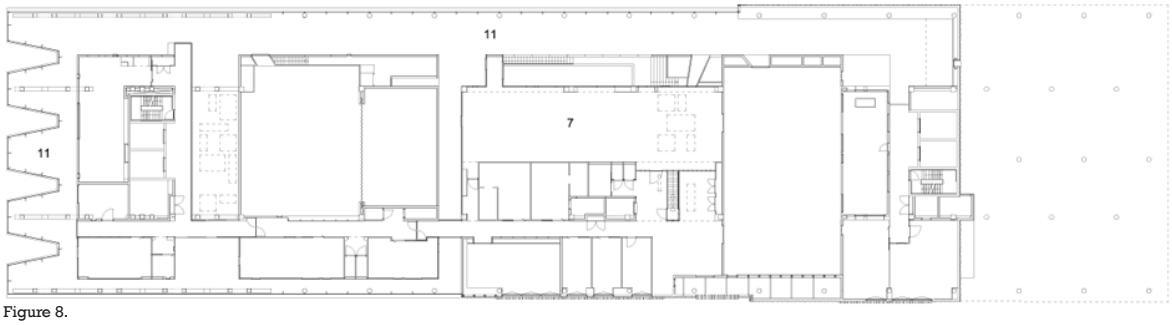


Figure 8.

0 20 m

level 1

1 entrance
2 office
3 gymnasium
4 swimming pool
5 theatre
6 restaurant
7 fitness centre
8 room for patient
9 living room
10 ronald mcdonald house
11 void
12 patio

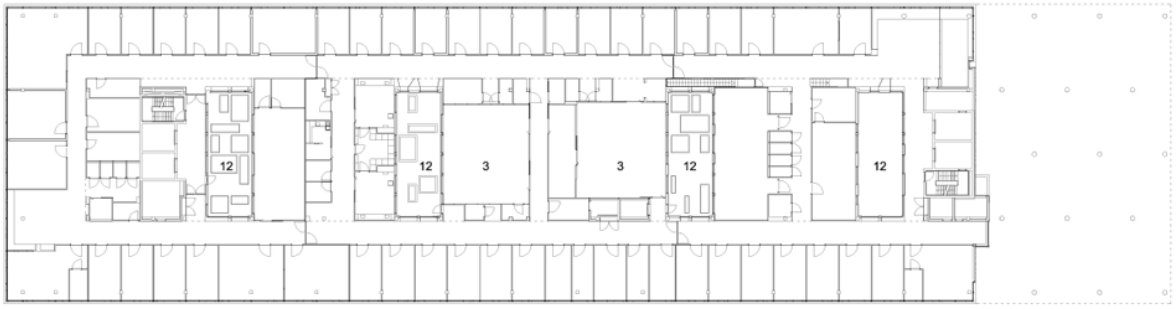


Figure 9.

0 20 m

level 2

1 entrance
2 office
3 gymnasium
4 swimming pool
5 theatre
6 restaurant
7 fitness centre
8 room for patient
9 living room
10 ronald mcdonald house
11 void
12 patio

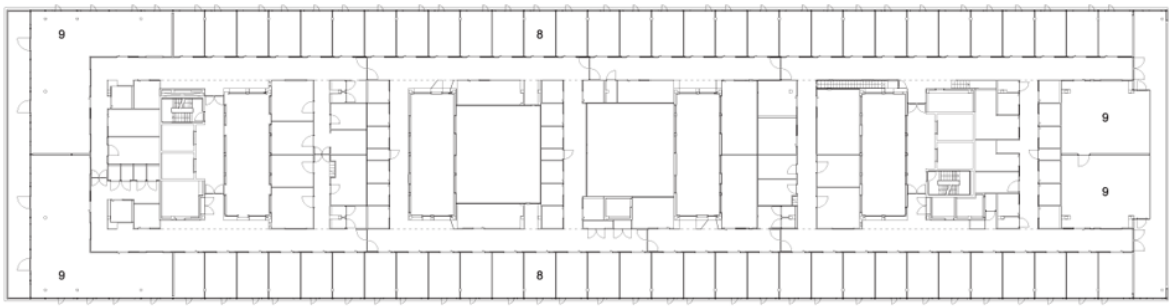


Figure 10.

0 20 m

level 3

1 entrance
2 office
3 gymnasium
4 swimming pool
5 theatre
6 restaurant
7 fitness centre
8 room for patient
9 living room
10 ronald mcdonald house
11 void
12 patio

Figure 11.

0 20 m

level 4

1 entrance
2 office
3 gymnasium
4 swimming pool
5 theatre
6 restaurant
7 fitness centre
8 room for patient
9 living room
10 ronald mcdonald house
11 void
12 patio

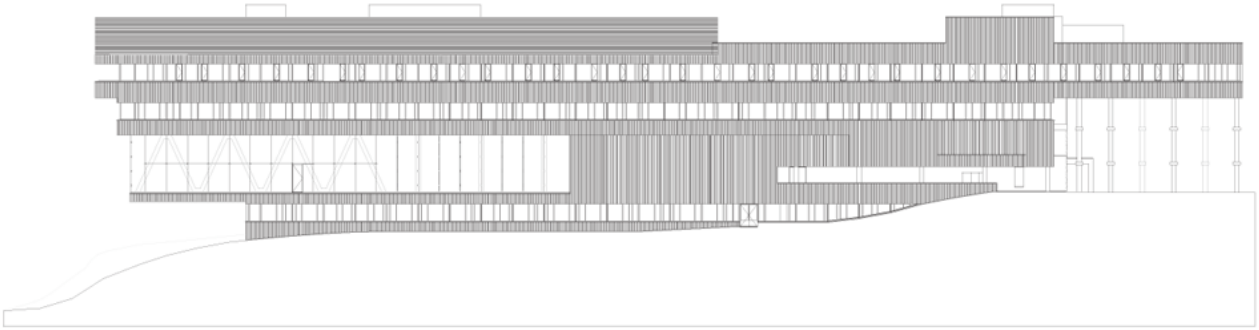


Figure 12.

east elevation

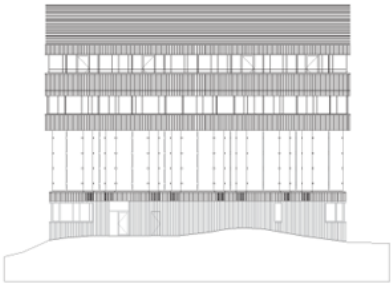


Figure 13.

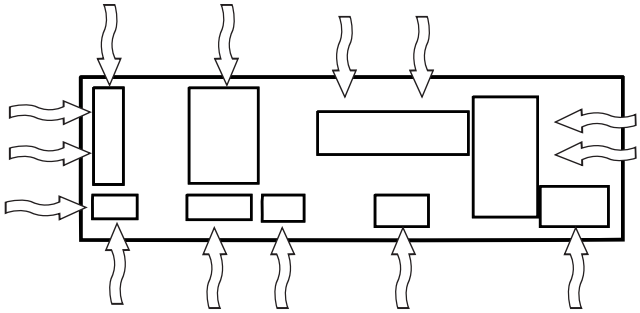
Figure 14.

south and north elevation

Figure 15.

longitudinal section

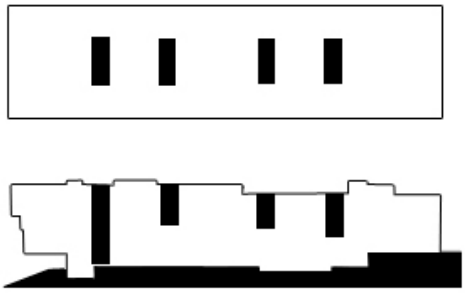
GRAPHIC ANALYSIS



natural light

structure

massing



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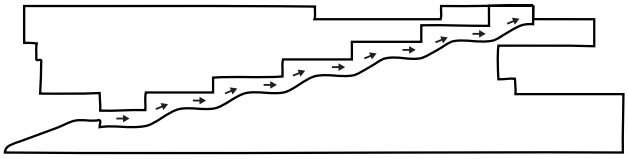

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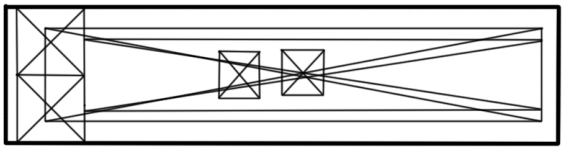

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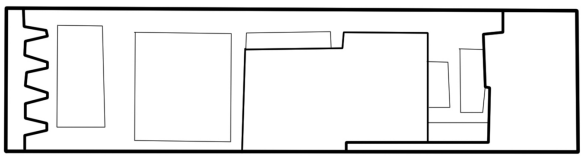


hierarchy

CASE 2

MAGGIE'S FIFE
CANCER CARING CENTER

Figure 16.

MAGGIE'S FIFE CANCER CARING CENTER
KIRKCALDY, UK
ZAHA HADID

Maggie's Cancer Caring Centers were founded by and named after the late Maggie Keswick Jencks, who died of cancer in 1995. Like her husband, architectural writer and critic Charles Jencks, she believed in the ability of buildings to uplift people. Maggie's challenged Hadid to create a relaxed and aesthetically uplifting environment, where additional support outside of the clinical environment could be provided for those affected by cancer.

The folded concrete form of Mag-

Figure 17.

gie's Fife is set on the edge of a wooded clearing adjacent to Victoria Hospital. This environment serves to provide a haven for cancer patients and functions as a portal to the natural world. A visitor approaches from the the hospital and is ushered by a sweeping wall into a quiet hall with views onto the wooded landscape. The cancer caring center is meant to continue the belt of trees surrounding the site it looks upon, as if to provide a window into the landscape. The concrete shell of the building provides both enclosure and structure, and glazing at either end of the building provides daylighting and views.

Triangular windows and skylights are punched in the exterior of the building, providing more daylighting and a sense of continuity through the building. The angular form of the building coupled with the acute openings shapes a building that is free of right angles. This form helps guide circulation within the building, directing traffic from the street into the landscape.

The open, supportive, and natural environment provided reaffirms the commitment of Maggies to providing an uplifting atmosphere for life beyond cancer. The open floorplan and holistic design is a functional opposite of the clinical institutions most patients are used to.

Large roof overhangs are used to extend the building into the landscape toward the hospital on the North side and provide solar shading to the glazed south facade. Internally, rooms are placed around an open-plan kitchen with unobstructed views into the landscape.

The center provides a place to meet with cancer support specialists, a library to browse for more information, and rooms for cancer support seminars. Maggie's Fife may be small in program, but the response to the client and environment it carries are large; it is a space completely devoted to the nearly 1,700 people diagnosed with cancer each year in Fife.

Maggie's Fife is a prototypical example of the type of caring atmosphere that is desirable for the treatment of human afflictions. The tactful design provides a unique space for users to feel at ease while learning about their disease. Additionally, the center provides for the patient a supportive atmosphere closely tied with the natural world.

Maggie's Fife aims to provide an atmosphere of trust, caring, and support above all. This is what makes the case special; it is a straightforward attempt to provide a space of support for those who need it most. The building is not a clinic nor a research institution, it is simply a place of refuge.

The small program of the building provides straightforward insights into the treatment of guests in a clinical and rehabilitative setting. The important features of this building are those that calm the user and give a sense of space, place, and of something bigger than themselves, not those spaces with a

more functional use.

Careful attention was placed on enfilade and orientation with this building. The user is ushered into the building by a wall that rises to meet them in such a way that it is easy to know which way to travel and where to look next. Maggie's Fife provides no illusions in its design; it is meant to be a place of refuge from the seemingly ceaseless battle with cancer.

The angular nature of the building and its placement as a wedge of concrete into a natural clearing establish it as a tool for accessing nature. The lines and walls of the building converge in such a fashion so as to make it impossible to experience the building without experiencing the natural wonder beyond it. The building becomes a bridge between the fast-paced world of cancer treatment and timeless realm of the natural world.

Like Groot Klimmendaal, Maggie's Fife provides ties the natural landscape and abundant daylighting to its user. A pattern of openness and clarity seems to be pervasive in this typology. Like all Maggie's Centers, the devotion to the ability of a building to uplift the human spirit is always present.

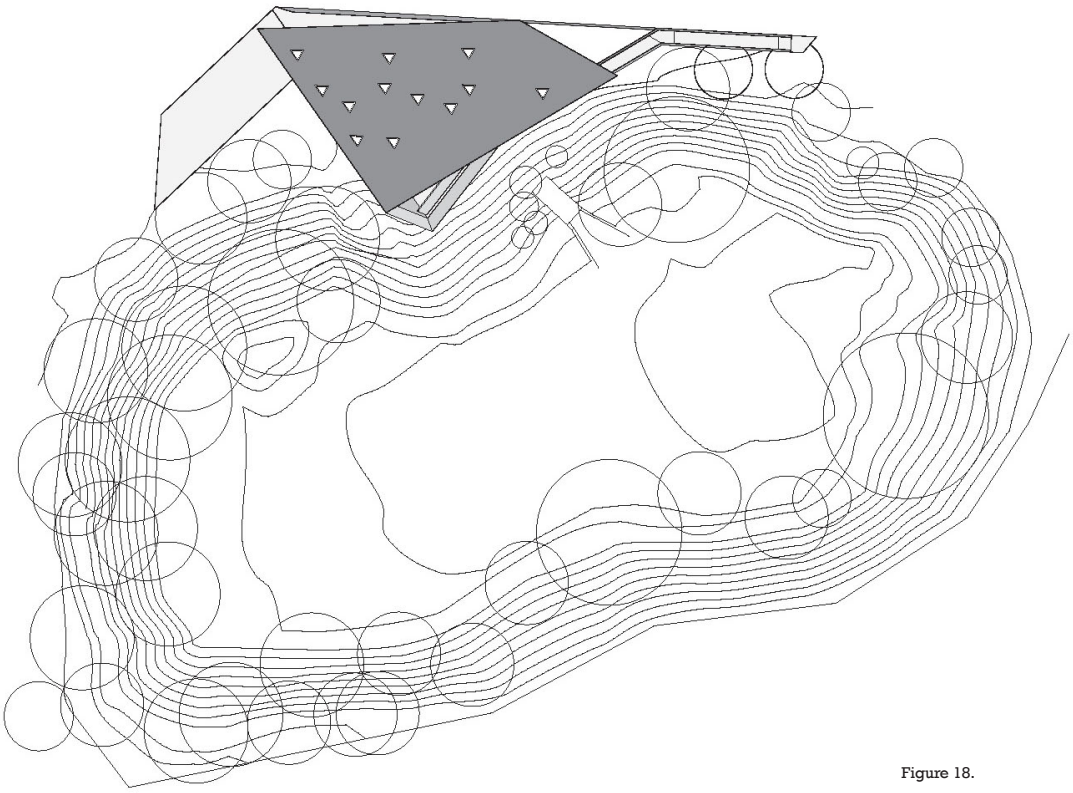


Figure 18.

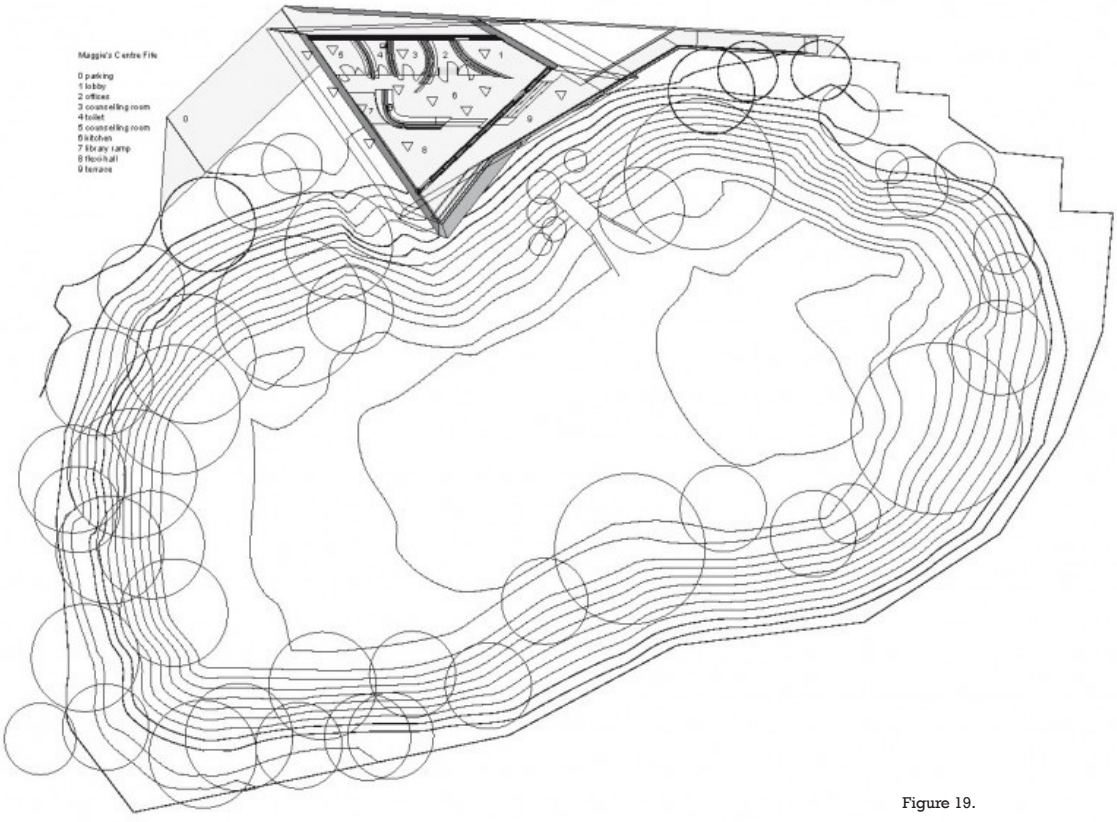


Figure 19.

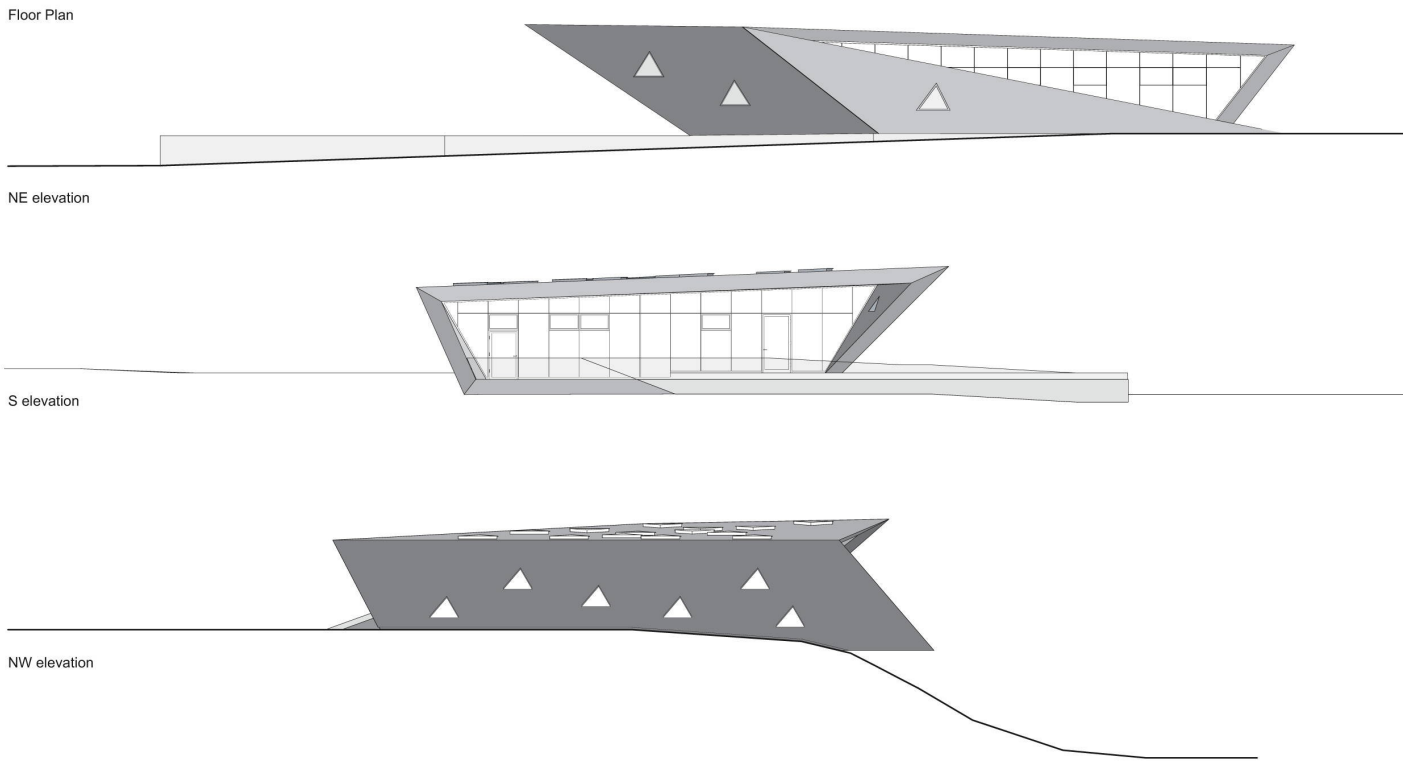
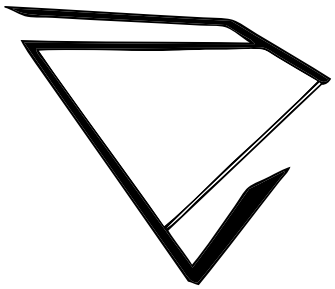


Figure 20.

GRAPHIC ANALYSIS



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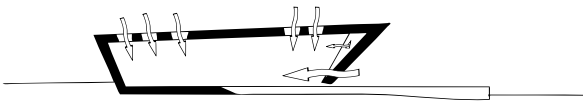
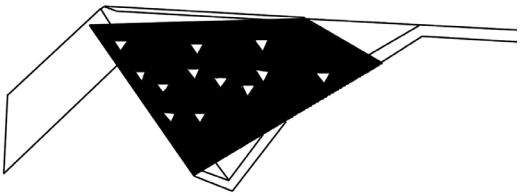


natural light



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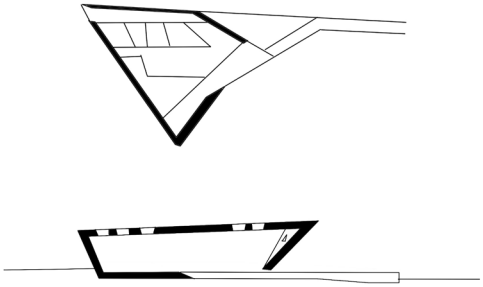
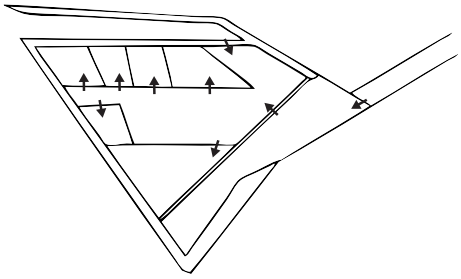
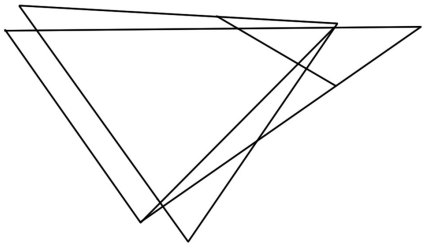


plan to section/elevation



circulation to space



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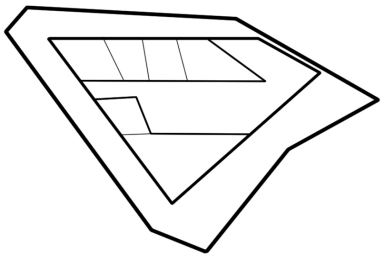


hierarchy

CASE 3

Figure 21.

KINDERGARTEN SIGHARTSTEIN
SIGHARTSTEIN, AUSTRIA
KADAWITTFELDARCHITEKTUR

Sighartstein kindergarten lies at the edge of a meadow along a row of spruce trees, continuing the landscape present on the site. The elevated and abstract "grass" facade of the building brings a certain harmony to the volume as well as an identity and orientation for the kindergarten. The building provides 830 sqm of space for play and learning as well as spaces for napping, eating, and socializing. A garden and other outdoor spaces are also part of the program.

The flat roofed two-story building

Figure 22.

contains all the functions necessary for a kindergarten. On the ground foor, the group rooms are lined up along the south side with direct access to the terrace and garden. The group rooms are comprised of two units, each with a wardrobe, sanitation area, and a storage space located in between the hall and the group areas. To the east are additional rooms such as the personnel area, administration, quiet room and kitchen. The core of the building is a multifunctional hall used as a junction for various functions: a space for shared activities and an alternative space for bad-weather activities.

Adjacent to the hall is a large free-standing staircase. Meant for play, the steps are covered in natural rubber floor covering that protects both the children and the stairs. The stairs lead to a multifunctional day-care space for younger children.

The floor-to-ceiling glazed ground floor invites nature straight into the building by lighting up the group rooms with plenty of sunlight while the screened openings on the upper level provide a more protected atmosphere for nurturing the kindergarten's youngest users. Daylighting is used throughout the building extensively to promote a playful connection between interior and exterior spaces.

The psychological workings of the color green play an important role in the design; Green was chosen for its calming and soothing qualities. According to color theory, green enhances qualities such as helpfulness, endurance, tolerance, and contentedness. The use of a single color creates a space for gathering energy and promotes regeneration. Green conveys the notion of freshness and youth inherent in the building.

The architects kept a simple color and material scheme with the idea that the school will one day be covered with children's drawings and toys, and that a simple palette is conducive to imagination and play.

Sighartstein Kindergarten is an important case because of its user group; although the kindergarten is meant for the growth of children under the supervision of adults, comparisons can be made to the kind of relearning that is necessary for addicts. Also important are the correlations found between building design in this case and others.

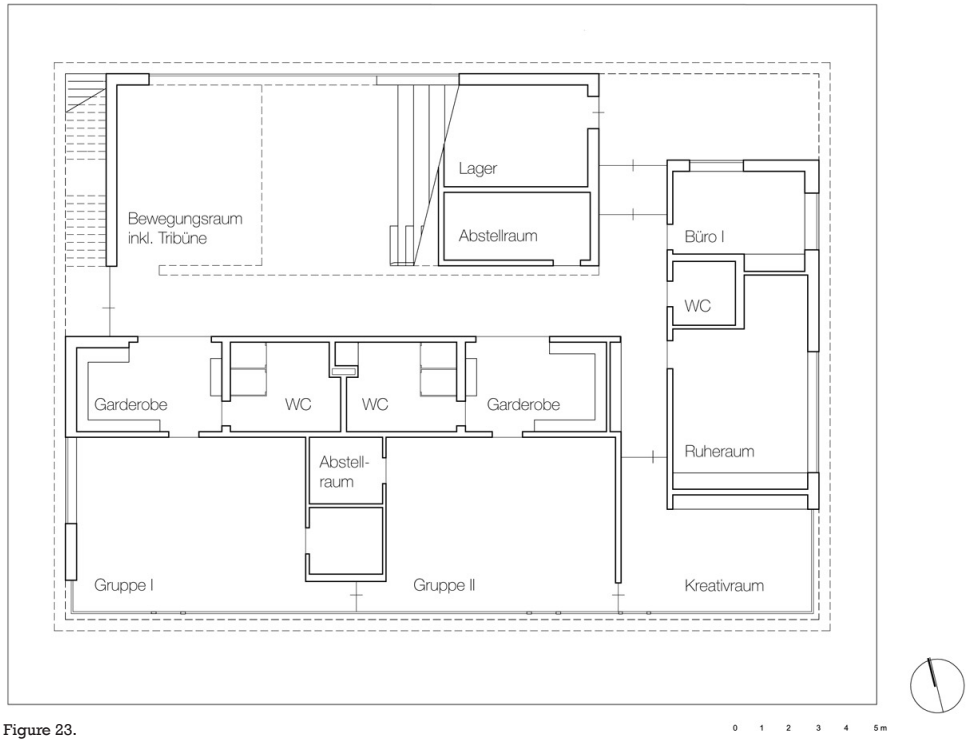
Although the users of Sighartstein Kindergarten are younger than most patients of addiction treatment, a correlation can be made between the program of a day-care center and an addiction retreat. A kitchen, classrooms, and activity spaces as well as spaces for personnel and auxiliary functions are necessary for both typologies, and both support and growth of a group of people are the primary connections between the roles of each institution.

The open and airy design of this building can be compared with both Maggie's Fife and Groot Klimmendaal. The extensive use of glazing and multiuse halls are common with all three buildings, as are the

use of skylighting and solar shading. The flat roof of the building is vegetated and solar panels offset the building's energy costs.

Sighartstein Kindergarten's connection to a natural site is also in common with other cases; the seamless transition between indoor and outdoor that is important to the kindergarten was also important for previous cases. A connection to the landscape coupled with an open plan seem to provide a space that nurtures learning and growing.

This kindergarten and day-care facility provides insight into the primal connection between learning and environment. It furthers the idea that buildings can impact and alter the way humans understand and interact with the world. Sighartstein is an example of architecture that aims to draw a sense of whimsy, childish wonder, and imagination from all of us.



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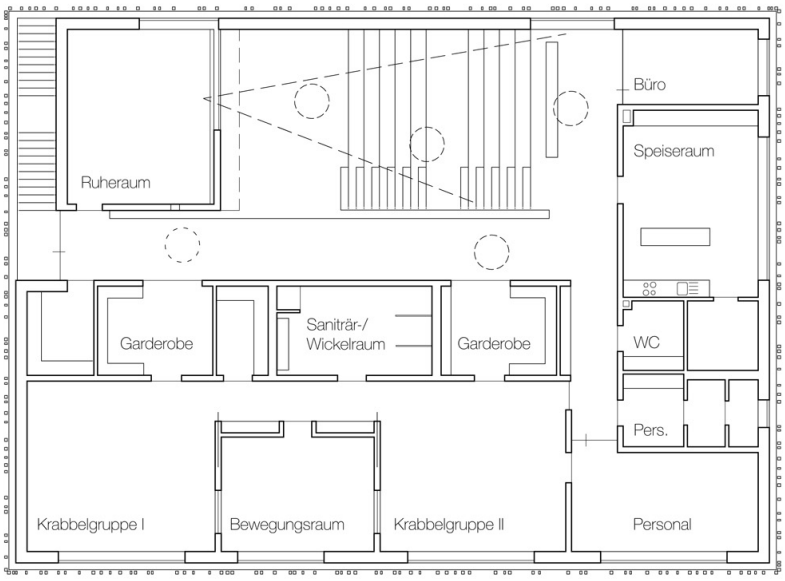

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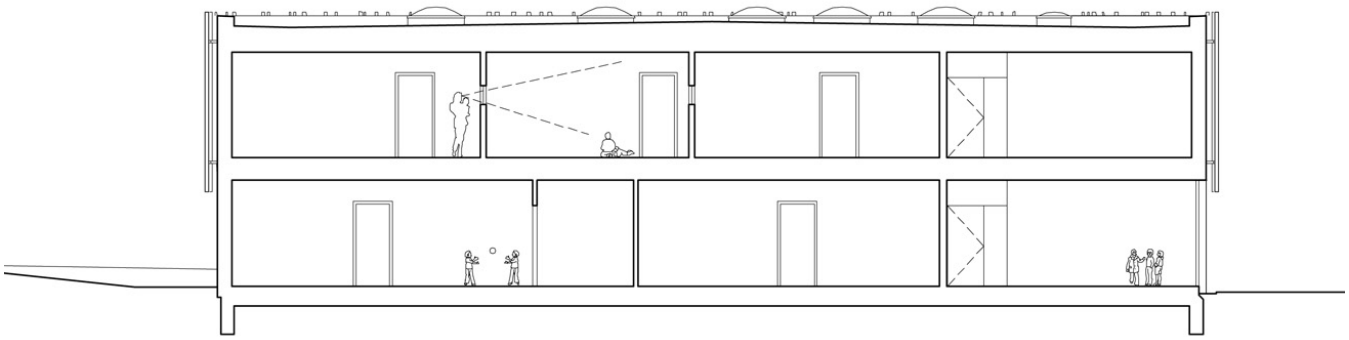

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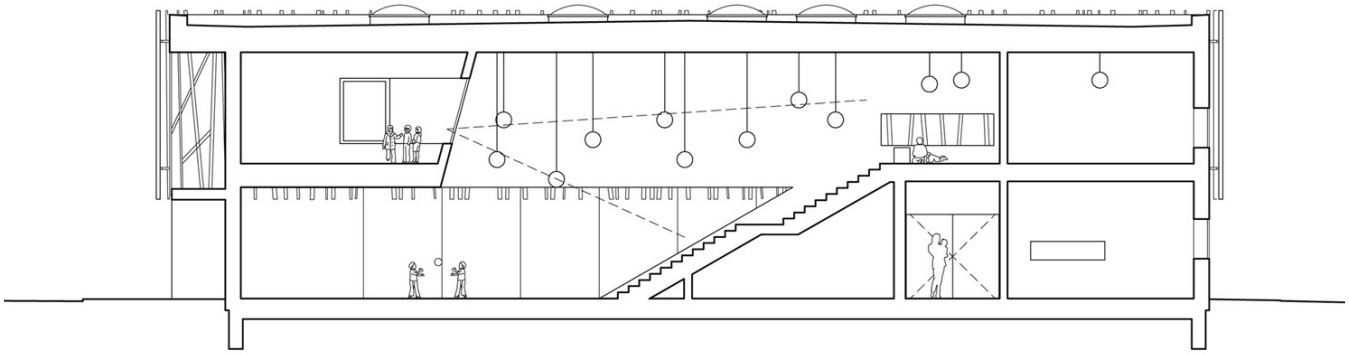
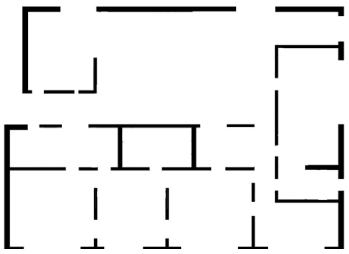


Figure 26.

GRAPHIC ANALYSIS



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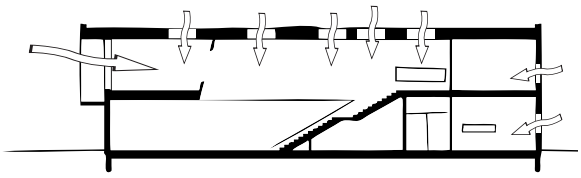
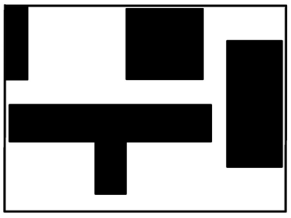


natural light



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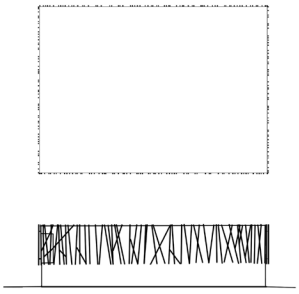

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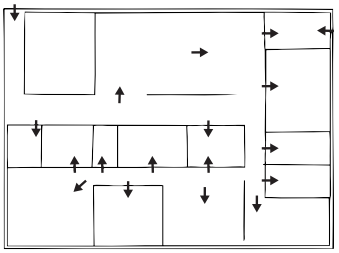
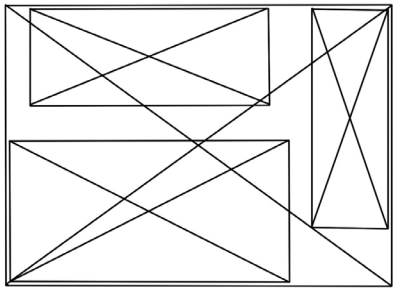


circulation to space



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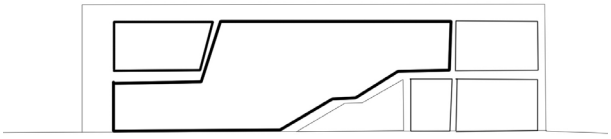


hierarchy

TYPOLOGICAL SUMMARY

Case study research was conducted using three unique designs; the first, a medical facility for rehabilitation, the second, a support facility for cancer patients, and the third, a kindergarten. All contained aspects relevant to the Internet addiction rehabilitation center building type. These case studies reinforced the ideas present in the theoretical premise by providing experiences based in the implementation of built environment rather than mediation through technology.

The three cases studied were of largely different programmatic scales. They ranged from the almost 14,000 sqm Groot Klimmendaal to the domestically scaled Maggie's Fife. Programs themselves were largely different as well, with the exception of large social spaces and smaller learning spaces in all three studies. All three cases were located at an edge condition; near or in a city but surrounded on most sides by large-scale vegetated areas. Materials varied from anodized aluminum and glass to concrete and steel, but all cases exhibited a material pallette that fit successfully into a natural environment. All three cases provide views into a natural landscape and provide ground floor access.

Of the three studies, only one, Maggie's Fife Cancer Caring Center, was affiliated with another institutional building, a nearby hospital. The building is adjacent to the hospital and is connected via paved pathways. This loose connection allows the center to be both autonamous from and integrated with the hospital.

A strong connection to the natural environment was implemented through all three studies. Groot Klimmendaal Rehabilitation Center is thrust into the woods, with only its entry path connecting the building to the city. Maggie's Fife was placed to fill a gap in natural border framed by trees, allowing the building to open both to the city and to a natural clearing. Sighartstein Kindergarten uses an open meadow as a background for the building, garden and playground. This suggests that a natural environment may be conducive to rehabilitation and supports the theoretical premise's aim to provide an unmediated physical experience.

More than simply an unmediated experience is suggested by the case

studies, however. All three case studies employ design tactics that aim to provide a unique experience to the user, usually through circulation and site design—suggesting that a unique encounter with the built environment may be a useful motivator.

The similarities between the kindergarten and other case studies may also provide a sociological link between designs; the social and learning spaces provided by all three case studies may suggest that these are the most important aspects of this typology. The design of social and learning spaces in the center should be considerate of this importance.

It is important to note that no one case study provides an entire blueprint for the promotion of responsible internet use; Groot Klimmendaal provides an excellent example of a program for a larger rehabilitation institute, and Maggie's and Sighartstein both provide examples of stand-alone facilities that may be included within a center for the responsible use of technology. Determining a program scale will be important before design proceeds. A unique program that considers all cases will be necessary.

The typology, above all, should provide the user with experiences that contrast the normal waiting rooms and drab hallways of contemporary clinical institutions. Wide spaces, views to gardens, comfortable surroundings, and furnishings that add to a sense of tranquility within the building will help the users feel welcome to the positive examples of responsible technology use around them. Additionally, this approach will allow staff and center users to work in a relaxed and enjoyable setting.

HISTORICAL CONTEXT

PLACES OF HEALING

Happiness and good health go hand in hand, and one of the factors that determines our state of mind is the quality of our surroundings. When we are ill, upset or stressed, our heightened sense of vulnerability leaves us craving a comfortable, familiar and safe environment. The design of hospitals or other public services where people seek help or support requires a particularly sensitive approach to minimise the sense of anxiety that they can invoke and instead offer a welcoming and hassle-free place for people to deal with their problems.

In 1930, Alvar Aalto completed the Paimio Sanatorium in southern Finland, which still provides a blueprint for how to design healthcare facilities that respond to both the physical and psychological needs of their patients (Griffiths). As a place of recuperation for those affected by tuberculosis, the sanatorium featured expansive terraces where patients could benefit from sunlight and plentiful clean air – the best known treatment at the time – but Aalto was also aware of the importance of designing a therapeutic interior, as the recovery could be a lengthy process.

Aspects of Aalto's design were influenced by Dutch architect Johannes Duiker's Zonnestraal Sanatorium in Hilversum, Netherlands, which was completed in 1925 (Griffiths). Here, private and public spaces were arranged to suit the patients' various needs; the complex also housed a nursery, pig farm, aviary and workshops, all intended to support the physical treatment, combined with occupational therapy, that would help ready the patients for their return to everyday life.

Unfortunately, many contemporary hospitals lack vision and resources, resulting in buildings whose depressing façades are matched by their labyrinthian interiors. Some private healthcare providers, however, are commissioning top architects to help them raise the standard of their facilities. Private health company Circle hired Foster + Partners to design its first new-build hospital in Bath, England, and is set to work with the practices of Richard Rogers and Michael Hopkins on future projects.

Another organization, Maggie's, is a charity providing places of refuge where people affected by can-

cer can receive advice and support away from the clinical conditions of the hospital. Over the past 15 years, the charity has commissioned some of the biggest names in architecture - including Frank Gehry, Zaha Hadid, and Richard Rogers – to design small but thoughtful buildings from which they can offer the services that people really need.

Maggie's founder, Maggie Keswick Jones, believed that a bright and cheerful environment could enhance well-being. She is not the first to believe that thoughtful, stimulating, and enjoyable environments offer a better way of life; this is a quality woven into the fabric of human existance.

THE INTERNET CULTURE

For the first time, in the 21st century, generations of Americans are being raised from birth with widespread access to the Internet. As of 2011, the estimated total number of Internet users was 2.1 billion, almost a third of the earth's population (Internet World Stats) In 2007, it was estimated that more than 97 percent of all telecommunicated information was carried over the Internet (Hilbert and Lopez). It is important to recognize the social and historical reaches of the Internet to understand its role in American culture.

One of the Internet's biggest roles may be in establishing English as the dominant language for digital communication, posturing it as the "lingua franca." Over 27 percent of web pages are in English, followed closely by Chinese, at 23 percent (Internet World Stats). The Internet has also achieved new relevance as a political tool-- leading to Internet censorship by some states. Many countries, including the United States, have enacted laws against the possession or distribution of certain material, such as child pornography, via the Internet, but do not actively censor online content.

The Internet has enabled entirely new forms of social interaction, activities, and organizing, thanks to its basic features such as widespread usability and access. Social networking websites such as Facebook, Twitter and MySpace have created new ways to socialize and interact. Users of these sites are able to add a wide variety of information to pages, to pursue common interests, and to connect with others.

The Internet has been a major outlet for leisure activity since its inception in the 1970s. Today, many people use

the Internet to access and download music, movies and other works for their enjoyment and relaxation. Over 6 million people use blogs or message boards as a means of communication and for the sharing of ideas. The pornography and gambling industries have taken advantage of the Internet, and often provide a significant source of advertising revenue for other websites (Ropelato).

Internet use has led to a recent trend in "cyberslacking" that may become a drain on corporate resources; a 2003 study revealed that the average UK employee spent almost an hour a day surfing the web while at work (Scotsman). This has led to other concerns from employers, such as the suspicion that internet use interferes with the deep thinking that may lead to creativity.

The New York Times suggested that social media websites such as Facebook and Twitter helped people organize the political revolutions in Egypt, assisting the organization of protests, communication of grievances, and dissemination of information (Kirkpatrick, 9 Feb 2011). This has led to the belief that the Internet is part of the public realm has powerful potential as a tool for civic communication.

Former AOL CEO Barry Schuler announced in 2000 that the "Internet Revolution" was bigger than the Industrial Revolution, placing upon this issue even deeper historical implications (Harrison). Over ten years later, e-commerce has dominated the global market and positions the Internet as a force that alters existing conceptions of economics, social organization, the nature of work, and cultural patterns. The turn-of-the-century comparison seems to be effective considering the reach and scope of the Internet Revolution.

The Internet's powerful role as a history-making tool for social communication ties directly to contemporary social issues. If the Internet Revolution is indeed as powerful of an economic force as the Industrial Revolution, it is important that its effects are closely monitored. A project that brings to light the forces acting upon society by the Internet will have the ability to promote the conscious use of the most powerful tool we have at our disposal today. There is an increasing demand for a symbol of the counter-revolution to a digitally mediated life; one that can only be realized in the natural world.

THESIS GOALS

The primary goals of this thesis are to educate students, professionals, and myself on the socio-environmental impact of problematic internet use to and provide a meaningful application of this education in an architectural setting. Research within the thesis will help others understand the concepts surrounding the thesis, whereas the application of design will provide a means of understanding the practical implications of the research.

The thesis strives to provide useful knowledge to the academic realm by documenting research and application of concepts for further use by other students. The thesis will be provided to the insitutional repository at North Dakota State University and will be accessible to students both at the university and beyond. The concepts explored through the thesis aim to open the door into further exploration by future academics and to broaden the understanding of the influence of socio-environmental research on architectural design.

A second goal of this thesis is to influence the architecural and environmental design professions to consider a different approach to the application of design principles on contemporary typologies. The ever-changing field of architecture must learn and adapt to new socio-environmental concepts to best serve the health, safety, and welfare of the public. By challenging the status quo of the designs of clinical institutions, the thesis aims to show an alternative to the economics-driven medical facilities currently occupying American cities.

The third goal of the thesis is to provide a platform of personal growth. The ideas found in the thesis present a launching platform for changing the way I think about the effects of socio-environmental issues on design. The thesis will provide the means to develop and exhibit research and design skills that will not only improve my understanding of design but will steer my professional career.

The ultimate goal of the thesis is to educate the American citizen on the alternatives to living in a technologically-mediated society.

SITE ANALYSIS.

THE SITE, a roughly 20,000 sqft corner lot in the Dinkytown district of Minneapolis, was chosen for several reasons. First, it is close to the University of Minnesota Minneapolis campus, providing a perfect opportunity for university-related research. Second, there is a very large population of young people in the area; Dinkytown is know for its young residents, and the site is adjacent to the University Technology Center. Also, the site is in a pedestrian-friendly neighborhood with plentiful nearby parking and slow traffic.

Within the site is even more character; high and medium-rise residential buildings form a backdrop to the site, forming a pocket that opens to the residential neighborhood to the Northwest. This frames the site as a sort of edge condition; to the South is the popular 4th Street entertainment strip, and a more domestically scaled residential neighborhood exists to the North.

Adding to this character are existing built structures on the site. Two buildings and a garden currently reside on the property. These existing buildings possess a quality that may lend itself well to adaptive reuse; the structure on the Northwest of the site is a large three-story brownstone house which has recently been abandoned, to the Southeast of this is another, smaller, house clad in brick in similar shape. A small, well-tended garden also exists on the corner of the lot. Existing as well on the site are several larger, old growth trees that posture the site as a sort of urban oasis. Together, these features suggest an interesting dialogue between mass, void, age, and character.

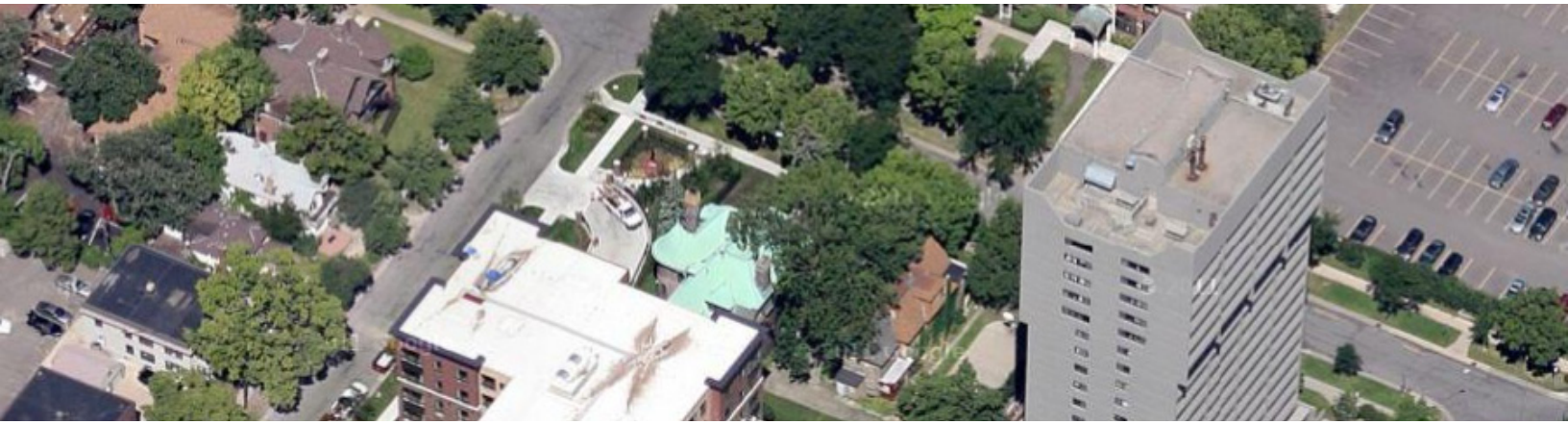


Figure 27. SOUTH AERIAL. © Google Maps 2011.

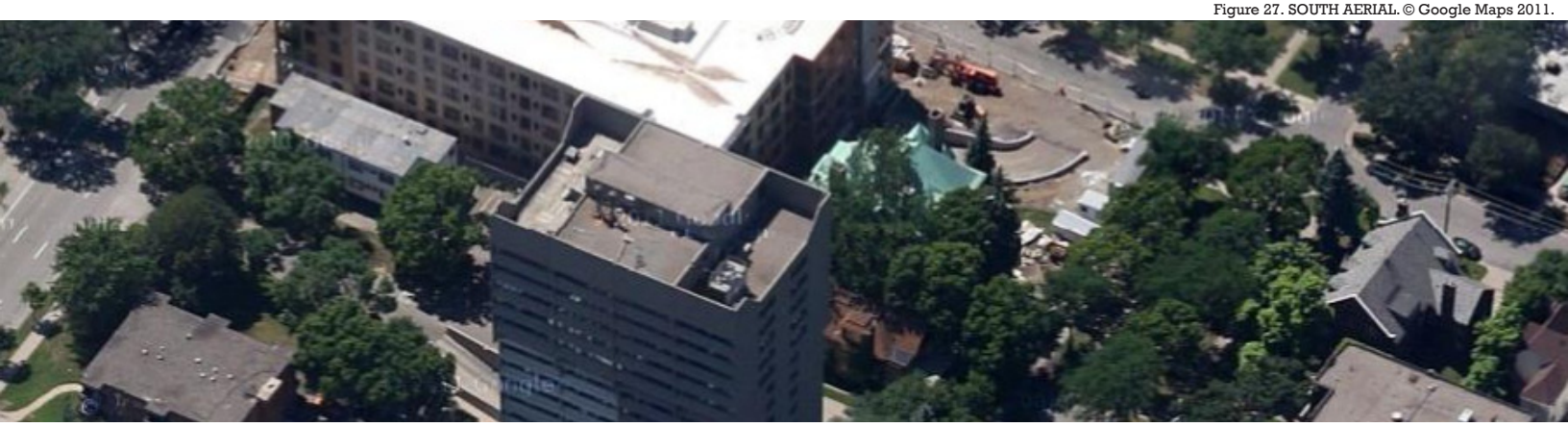


Figure 28. EAST AERIAL. © Google Maps 2011.

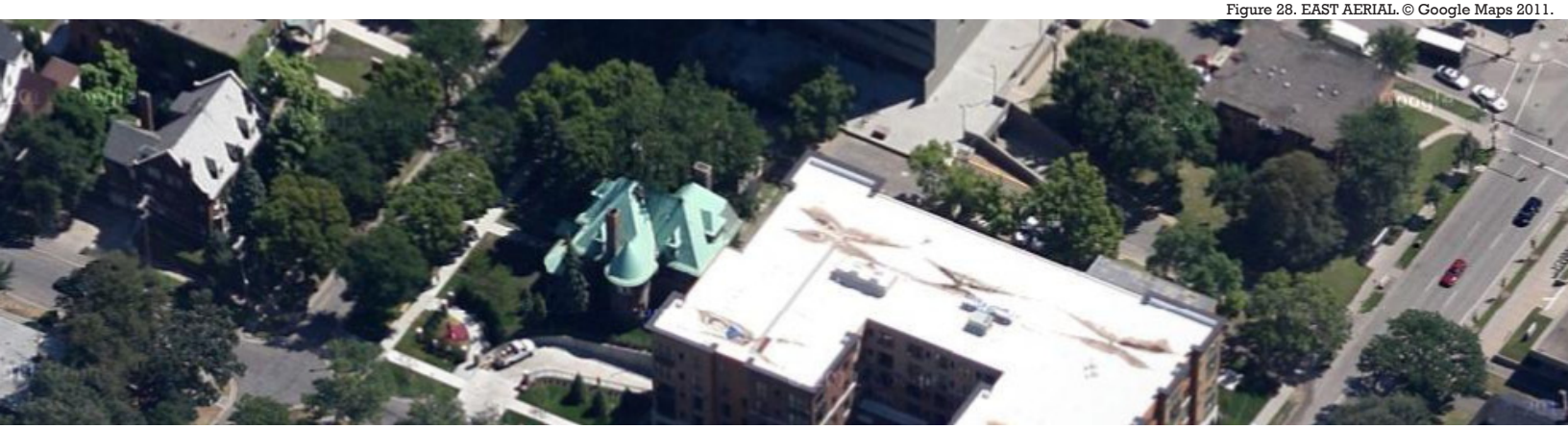


Figure 29. NORTH AERIAL. © Google Maps 2011.

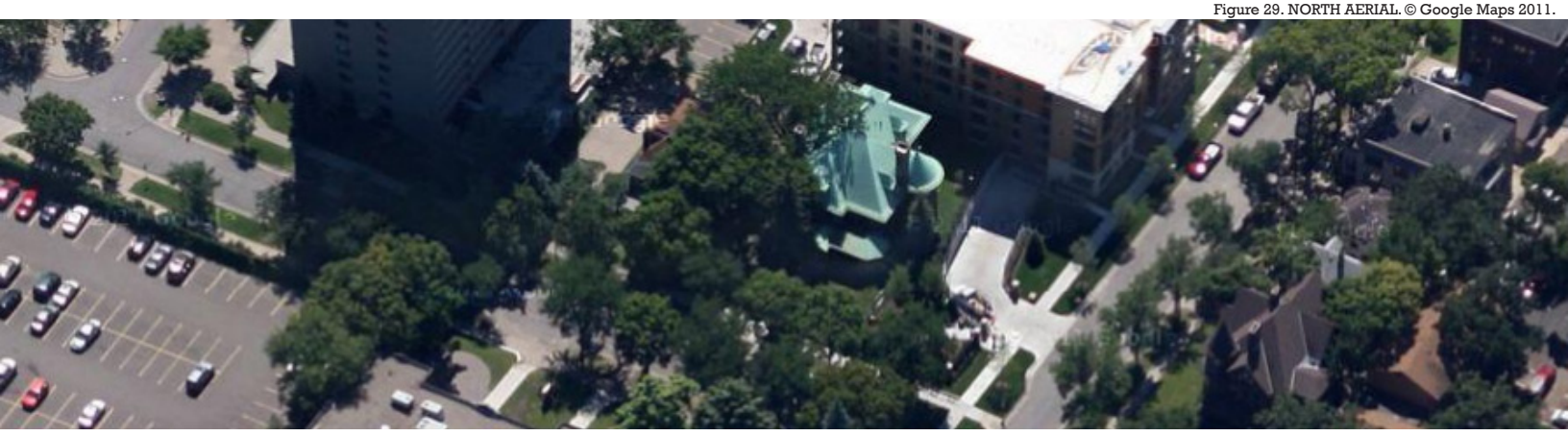


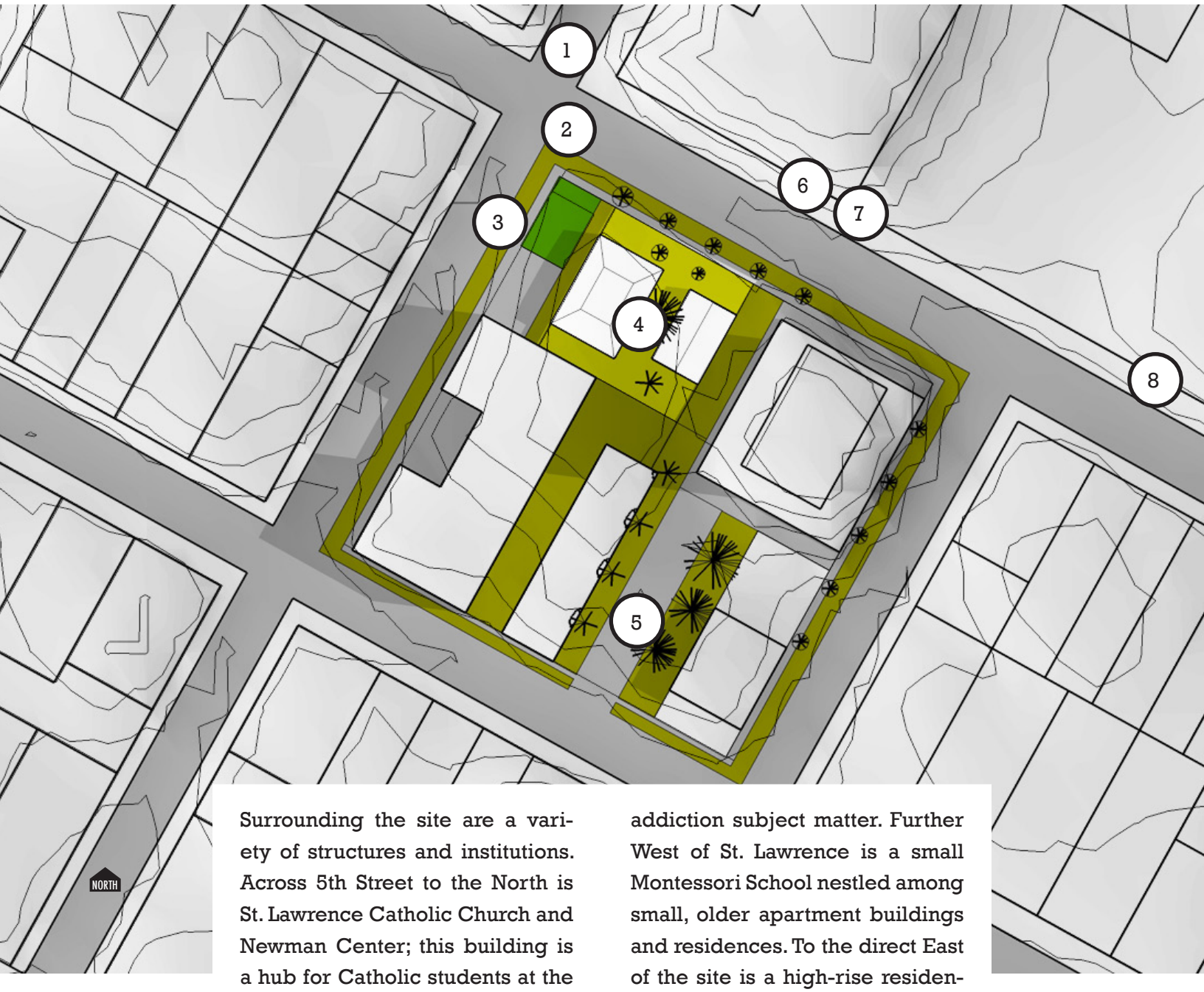
Figure 30. WEST AERIAL. © Google maps 2011.

1212 5TH ST SE
TRI-PLEX

Bedrooms:	4	Bldg Area:	4050
Baths:	3	Above Grade Area:	2760
Res. Rooms:	12	Ground/Main Flr:	1290
Year Built:	1900	Second Flr:	1380
Stories:	2	Bsmnt Area:	1290

1206 5TH ST SE
VACANT VICTORIAN

Year Built:	1892	Ground/Main Flr:	2148
Stories:	3.5	Second Flr:	2148
Bldg Area:	6444	Bsmnt Area:	2148
Above Grade Area:	4296	Finished Bsmnt:	537



Surrounding the site are a variety of structures and institutions. Across 5th Street to the North is St. Lawrence Catholic Church and Newman Center; this building is a hub for Catholic students at the University of Minnesota. To the East of this building, across a large parking lot, is the former Marshall High School, converted into the University Technology Center; a perfect neighbor for the Internet addiction subject matter. Further West of St. Lawrence is a small Montessori School nestled among small, older apartment buildings and residences. To the direct East of the site is a high-rise residential building with business access on the first floor. To the South of the site is a new mid-rise residential building and its accompanying parking lot.


SE 5th St
SE 12th Av
ONE WAY
1


2


SNOW EMERGENCY ROUTE
BEGIN
3


4


5


6

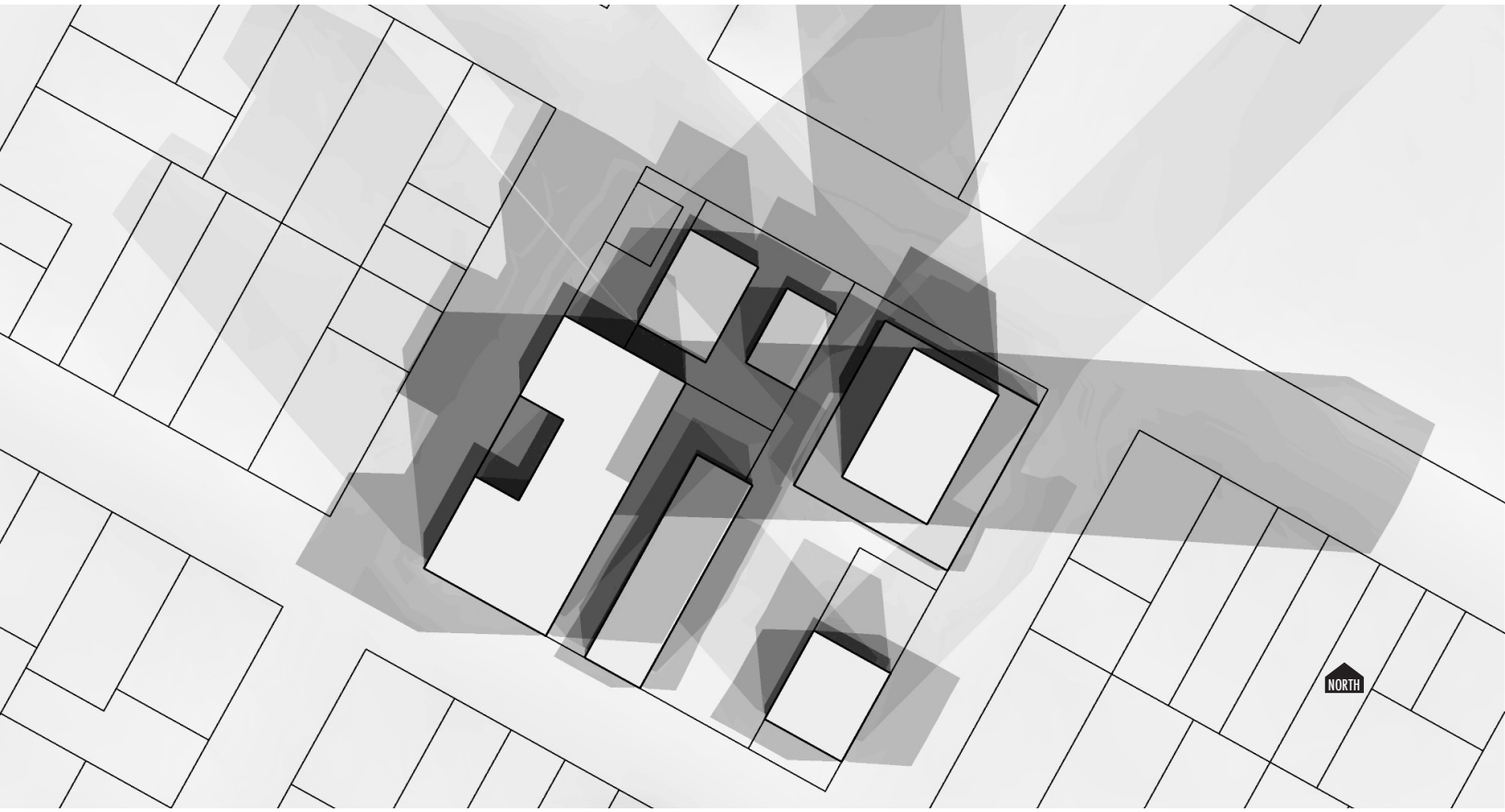
The overall feel of the site can be described as 'cozy.' The combination of institutional, residential, and commercial buildings provide a dynamic neighborhood that is distinctly slower-paced than nearby neighborhoods. High-rise buildings nearby overshadow the site, and together with existing vegetation provide a sense of visual rest within the site. Slow-moving traffic suggests that one should linger at the site, rather than quickly pass through it. The visual effect of the site correlates with the domestic approach to the thesis.

SOIL CLASSIFICATION:
D34B—URBAN LAND-HUBBARD COMPLEX,
0 TO 8 PERCENT SLOPES

TYPICAL PROFILE:
0 TO 18 INCHES: LOAMY SAND
18 TO 23 INCHES: LOAMY SAND
23 TO 80 INCHES: SAND
MINOR COMPONENTS: MOSFORD 5 PERCENT

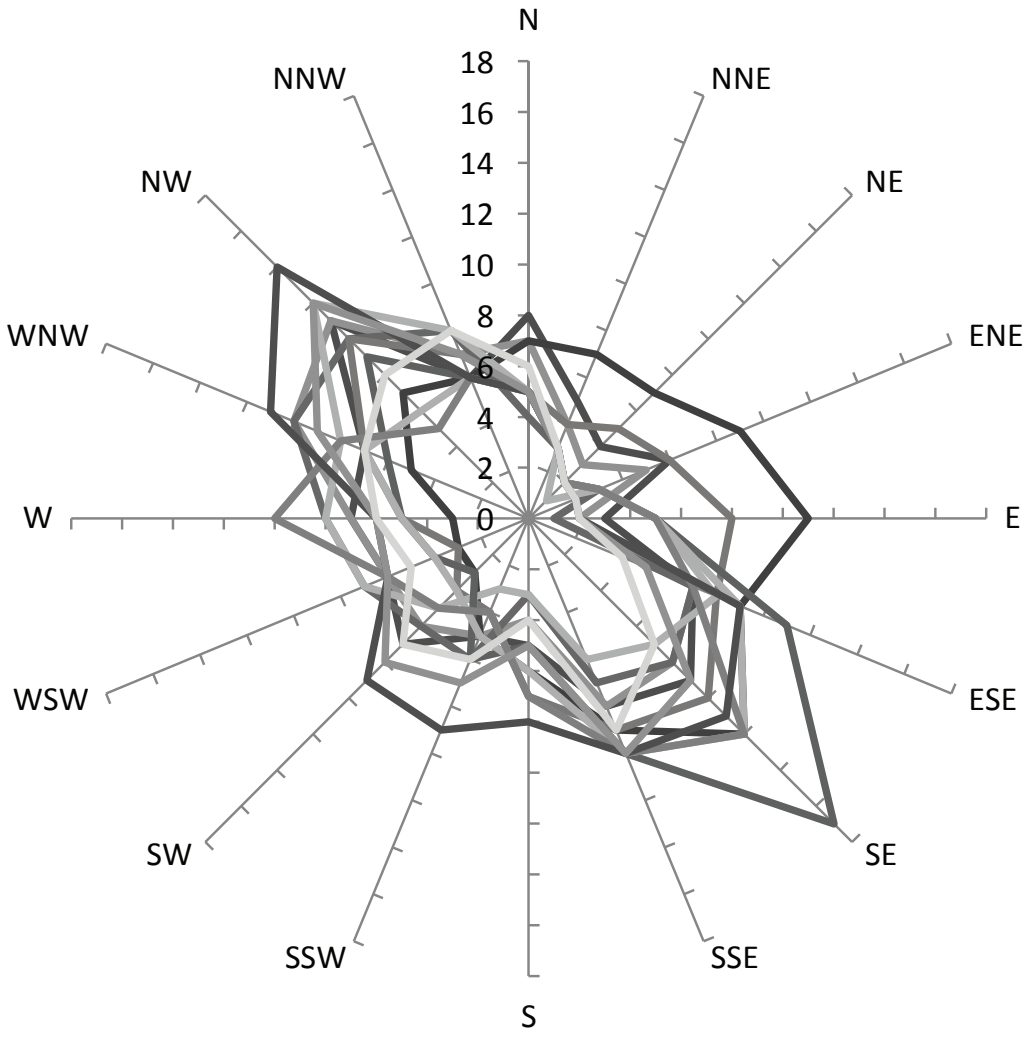
MEAN ANNUAL PRECIPITATION: 23 TO 35 INCHES
MEAN ANNUAL AIR TEMPERATURE: 40 TO 50 DEGREES F
FROST-FREE PERIOD: 110 TO 200 DAYS

URBAN LAND: 75 PERCENT
HUBBARD AND SIMILAR SOILS: 20 PERCENT
MINOR COMPONENTS: 5 PERCENT

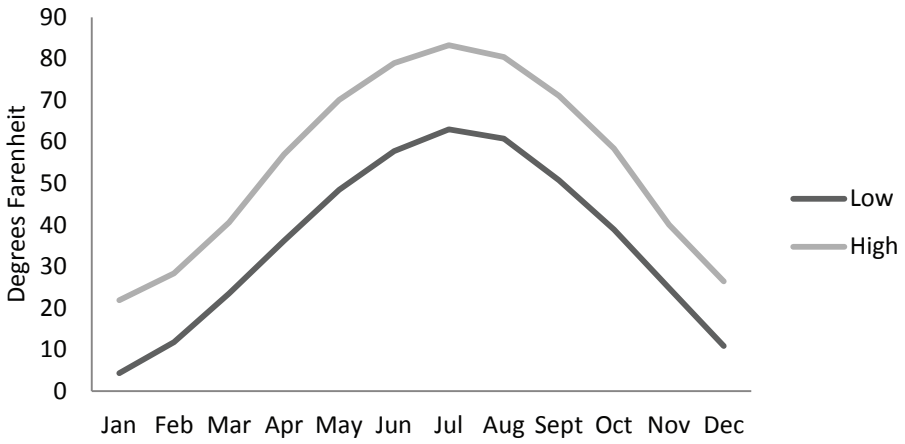

NORTH

CLIMATE DATA.

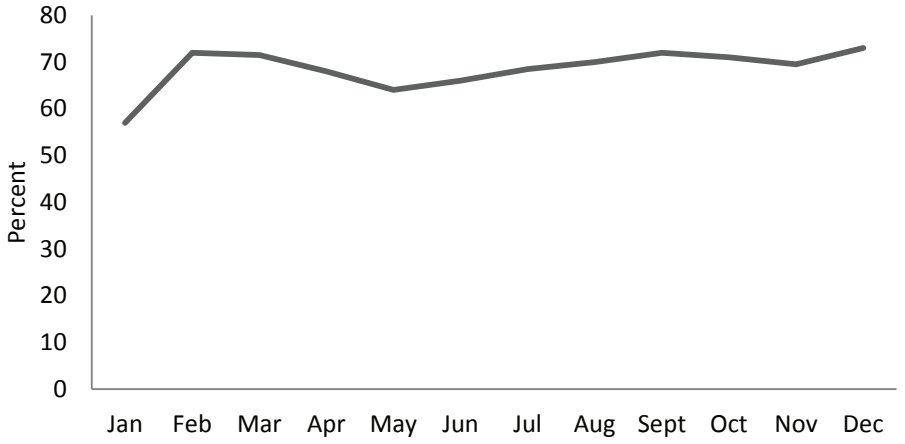
WIND DIRECTION



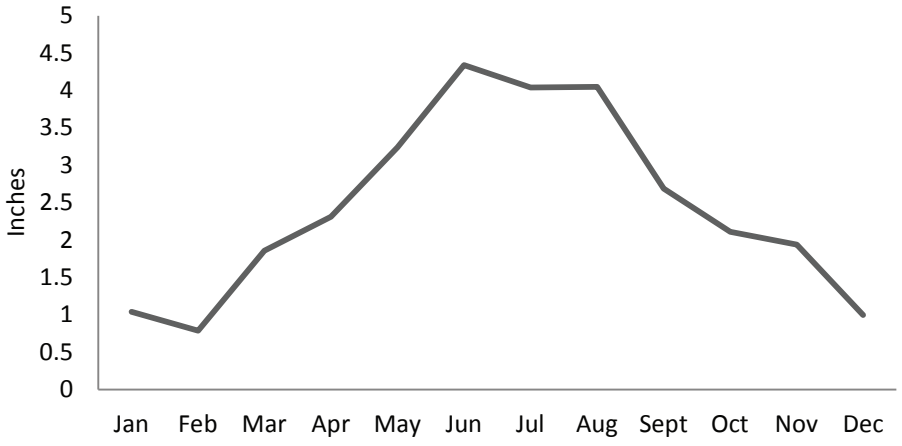
AVERAGE TEMPERATURE



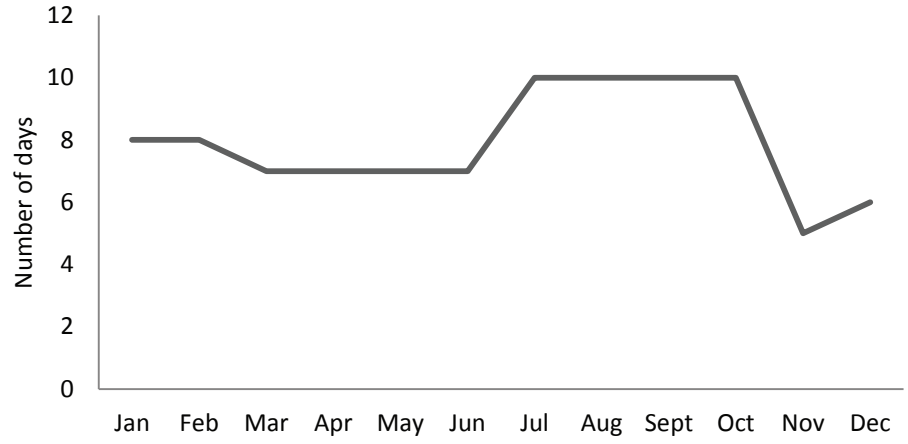
AVERAGE RELATIVE HUMIDITY



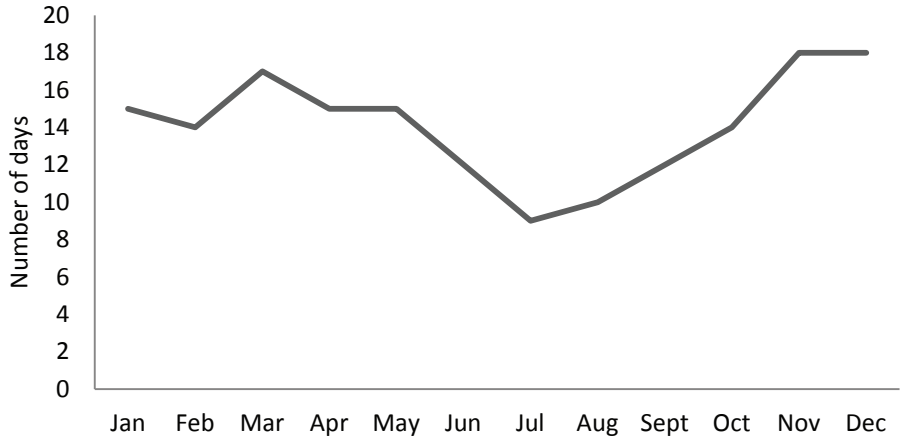
AVERAGE RAINFALL



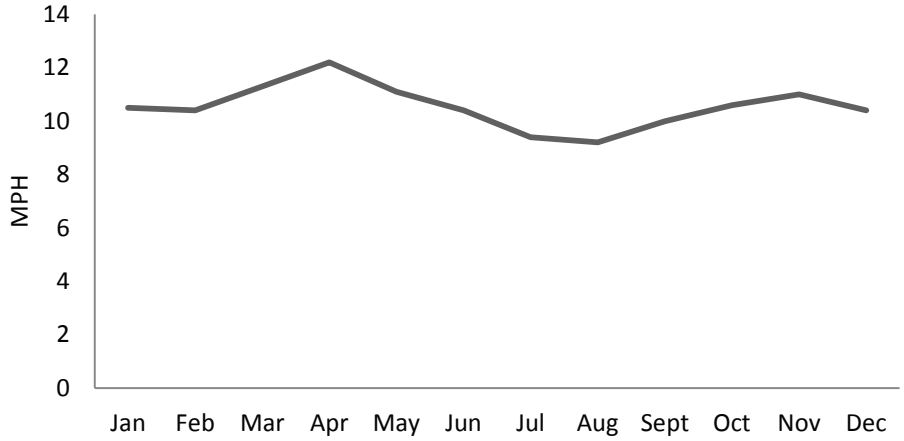
CLEAR DAYS



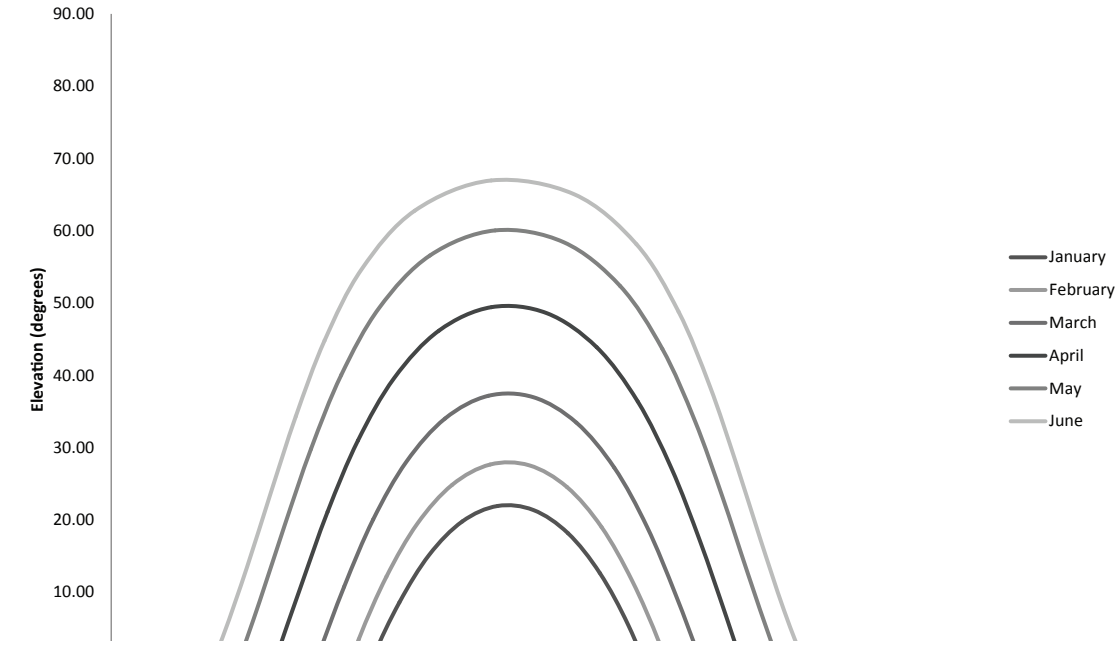
CLOUDY DAYS

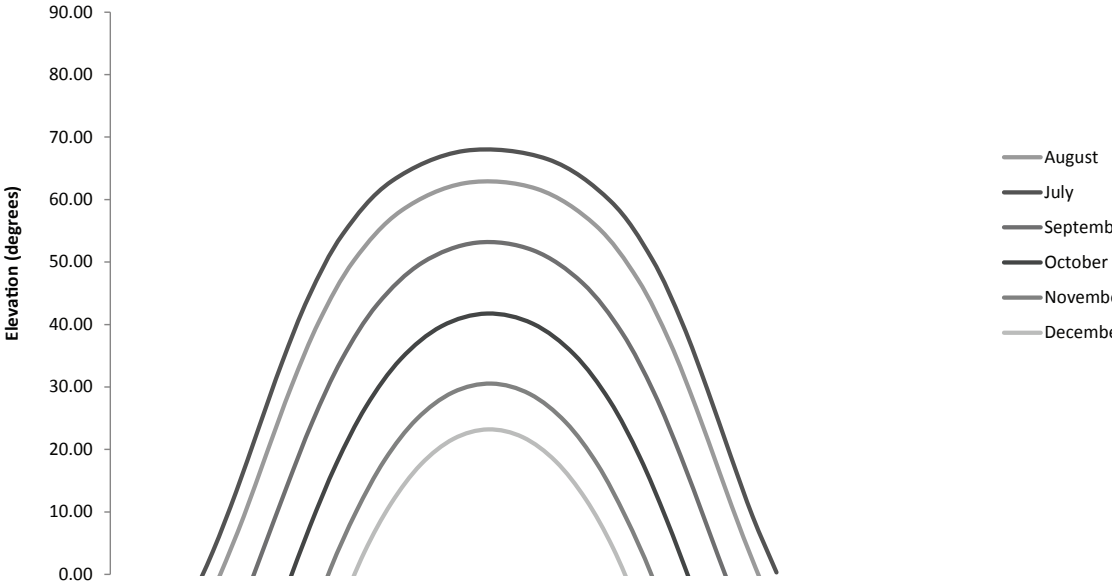


AVERAGE WIND SPEED



SUN PATH


90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
Elevation (degrees)
January
February
March
April
May
June


90.00
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0.00
Elevation (degrees)
August
July
Septemb
October
Novemb
Decemb

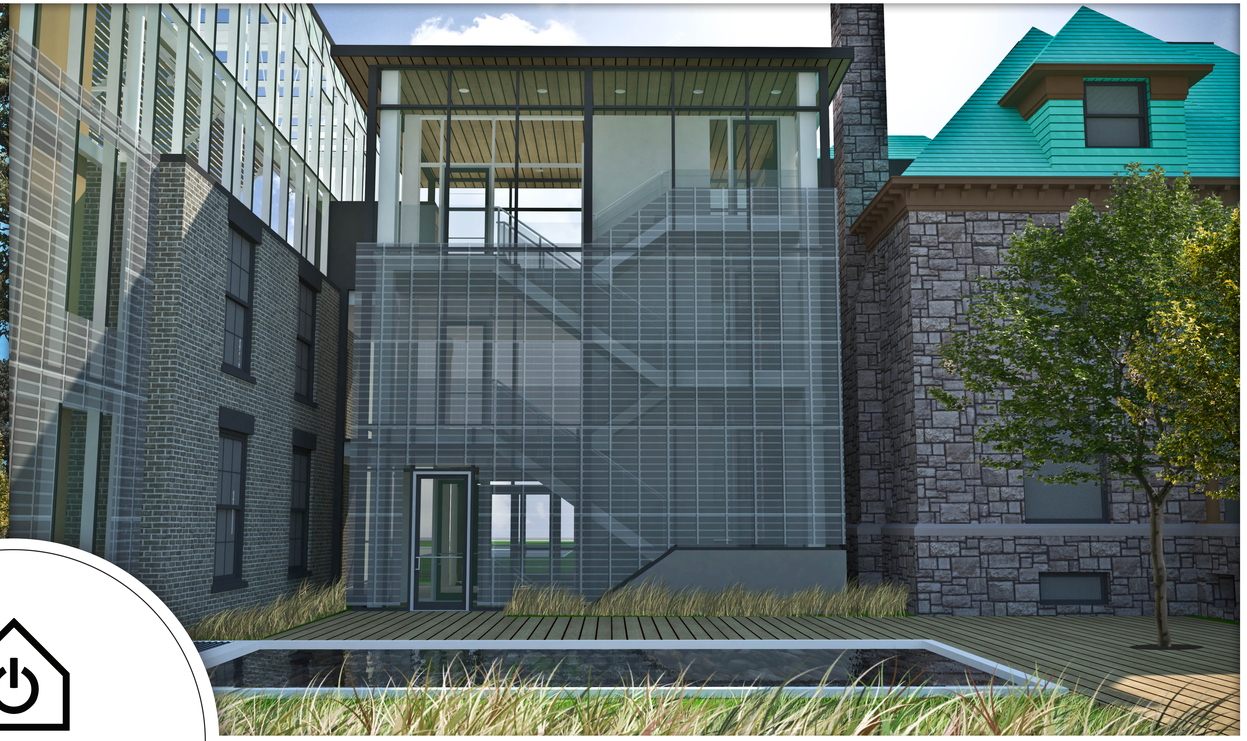
PROGRAMMATIC REQUIREMENTS

FIGURE 31.EDUCATION

FIGURE 32.WORKSHOP

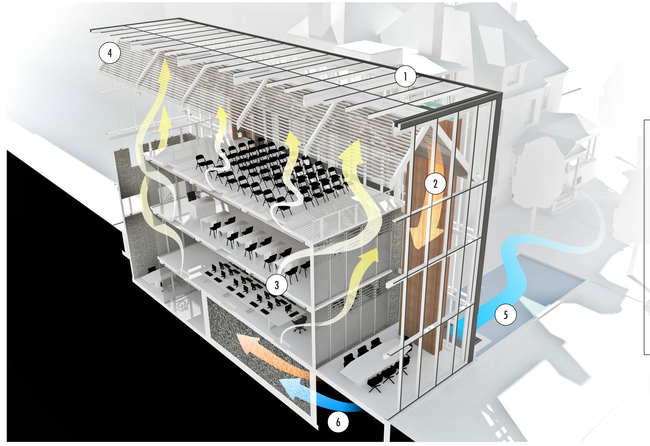
ROOM	AREA (SFT)
teaching lab	800
classrooms	1200 (x4)
public toilets	400 (x3)
lobby	400
outreach office	400
staff offices	400 (x6)
meeting	400
flexible seminar room	1200
gallery	400
laboratory	1200 (x2)
breakout	400 (x2)
reception	325
storage	325
TOTAL	15850

DESIGN.



RESTART | RETREAT

MINNESOTA CENTER FOR
THE RESPONSIBLE USE OF TECHNOLOGY



WINTER:

Solar radiation is trapped above pitched-roof louver system (.1). Interior 'chimneys' pull hot air from the roof into a rock bed below the building (2). This heat is stored in the rock bed and released into the building above through the floors throughout the day (3).

SUMMER:

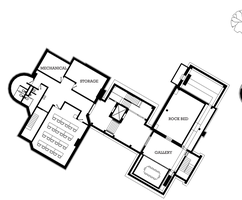
Air in the building is stratified due to the open atria at the ends of the building. Hot air accumulates at the top of the building, where it is ventilated through mechanically operable windows (4). The release of hot air from the top of the building draws cool air in from the North side of the building (5). The cool air is drawn over the rock bed at night, flushing heat from the building (6). During the day, the rock bed absorbs heat from air passing over it, cooling the air, which is distributed throughout the building.

THE INTERNET may be the greatest technological advancement of our generation. It has opened a vast web of social and economic interactions that span the globe. However, the Internet is not immune to the affects of progress; it has changed the way we use technology for good (or bad). Computers are no longer simply productivity tools-- we use them to explore the world, meet friends, shop, read, watch television, and play games as well. As computers begin to mediate our daily activities more and more, it becomes increasingly difficult to seperate work from play.

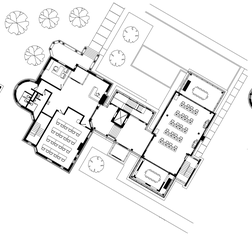
The Minnesota Center for the Responsible Use of Technology aims to solve this dilemma. The center provides the education, support, and facilities to reconnect people with technology--as a tool for production rather than entertainment. The facilities will be used to host classes and seminars promoting responsible computer use in school and at the workplace, as well as providing high-end computer labs to the public--offering access to powerful software and machines such as laser cutters, 3-D printers, and plotters--that normally only large institutions can afford.

The building itself also employs technology responsibly. The center makes reuses two existing residential buildings on the site rather than employing all new construction. Additionally, the building is heated, air conditioned, and ventilated using passive solar techniques, minimizing traditional heating, air conditioning, and air handling loads.

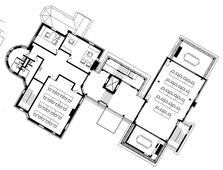
Located in the Dinkytown district of Minneapolis, the center is located near the University of Minnesota campus and downtown Minneapolis in a community swimming with young, university-educated professionals. Adjacent to the center is a large tech incubator which will provide opportunities to take the skills and products developed at the center into the real world.



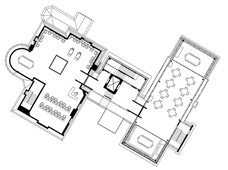
BASEMENT



1ST FLOOR



2ND FLOOR



3RD FLOOR

FROM LEFT TO RIGHT:

A speaker prepares for a seminar in the multifunctional gallery on the top floor. Two guests take advantage of a daylit breakout space on the north side of the building. Windows open to vent hot air on a summer day. A composite image shows how the louvers on the top floor move according to changing solar conditions. A night image shows the quality of light spilling from windows and skylights.

ARCH 777 DESIGN THESIS, SPRING 2012.
JOSEPH SCALLON, MARK BARNHOUSE.
GOOGLE SKETCHUP, VRAY, PHOTOSHOP.

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